REPORT

OF THE

HEALTH DEPARTMENT

OF

THE PANAMA CANAL

FOR THE

CALENDAR YEAR

1918

ARTHUR T. McCORMACK

Lieutenant-Colonel, Medical Reserve Corps, United States Army
Chief Health Officer

THE PANAMA CANAL PRESS
MOUNT HOPE, C. Z.
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LETTER OF TRANSMITTAL

THE PANAMA CANAL,
HEALTH DEPARTMENT,
BALBOA HEIGHTS, C. Z., *January 15, 1919.*

Col. CHESTER HARDING,
Governor, The Panama Canal,
Balboa Heights, Canal Zone.

SIR: I have the honor to submit the following report of the operations of the health department for the year 1918.

Respectfully,
ARTHUR T. MCCORMACK,
Chief Health Officer.

GENERAL REMARKS.

MALARIA.

Malaria continues to be the principal preventable disease against which our sanitary work is directed. During the past years it has been demonstrated, as might have been reasonably expected, that the slightest relaxation in the rigid antimosquito work will be followed by an immediate response in at first a gradual and then a rapid increase in the incidence of malaria.

The number of malaria cases among employees for the past three years, has been as follows:

	1916	1917	1918
From the sanitated areas of the Canal Zone and the two cities	505	264	182
From jungle-clearing camps	42	173	260
From fortification work and excursions into the jungle, interior points, etc		36	30
Total number of cases	547	473	472

Included in the 1918 total are 32 carriers found in a jungle clearing camp which were sent into the hospital for special study and not because they were sick.

The average number of employees for the year was approximately 25,520. This gives a total malaria rate of 18.5.

However, there were 2,000 employees working in the jungle who furnished 260 cases, of which 32 were the carriers mentioned. In the 23,520 employees in the sanitated area and the two cities, this gives a rate of 7.7, while in the adjacent jungle camps the rate was 130 per thousand.

The difference between the rate in the sanitated area, 7.7 and the unsanitated areas, 130, is really the sanitary index of the Isthmus. Without constant antimosquito work by a trained and well-supervised body of sanitary inspectors the former rate would quite rapidly approach the latter.

The encroachment of the cattle industry on the areas nearer military reservations and civil settlements has shown that profuse anopheles breeding results in all wet areas where cattle tracks are found and this increases danger of flights to quarters at night. It will be necessary to direct that no cattle be allowed in wet areas, nor during the wet season at all, within a mile and a half from inhabited areas.

The health department has strongly recommended and the Governor, the General commanding the Department, and the Admiral of the 15th Naval District have urged upon their respective departments the necessity for a sanitary fill along the east side of the Margarita road from Emiliano Hill to Coco Solo, near Colon. This is a continuous swamp, and is the source of all of the mosquitoes at France Field, Coco Solo Navy Base, and Fort Randolph. It is of the utmost importance that this fill be made without delay.

The sanitary fill along the Ancon-Corozal road has been considered completed. On account of settling, additional fills should be made where necessary.

Excepting Coco Solo, Pueblo Nuevo and Las Sabanas, suburbs of Panama, have been the most prolific source of malaria, not only in Panama but among our employees and other Americans who drive through them. A careful topographical sanitary survey has been ordered with a view to sanitating this extensive mosquito-breeding area in the same comprehensive way as the sanitated areas of the Zone.

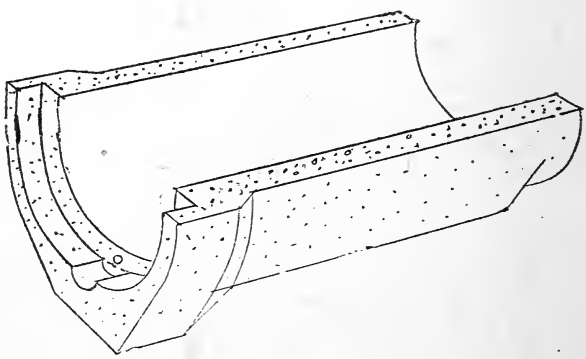

FIGURE 1.

A valuable contribution to antimalarial work was made by one of our sanitary inspectors, in devising a sectional concrete ditch bottom. Figure 1 shows a section of this drain 30″ long by 10″

inside diameter. Each section has a bell joint which is provided with a male and female union. The joints are held together by a ½-inch steel plug, which stiffens the segments until they have been properly backfilled and leveled and the cement poured in the joints has hardened. The proportion of cement, sand, and gravel is the same as in ordinary block construction. They are reinforced with chicken wire. Each segment weighs 100 pounds. Portability and reclamation of the segments of an abandoned drain are special advantages in addition to economy in permanent drain construction and the far better character of ditch made by these segments compared with "green" concrete construction in flowing water. The size of the segment can be varied. Key walls can be added in "green" concrete and curved and angle sections are easily constructed.

INFLUENZA.

Influenza arrived on the Isthmus in a transport of soldiers from Porto Rico in September. This was the first and mildest type of influenza, which had been imported from the first Spanish outbreak directly to Porto Rico. There were 1,530 cases in the Zone, most of which were in the Porto Rican soldiers and were quite mild, but followed by complete prostration and frequently by nervous sequela. There were no deaths during this time. This was due to the immediate hospitalization of cases and the care of isolation and treatment carried out. Nine ships having had deaths from pneumonia following influenza or having an epidemic of the disease aboard later, were quarantined at Colon. The deaths from these ships and from the patients removed from them were quite numerous, but the disease did not again appear in epidemic form on the Isthmus.

PNEUMONIA.

Pneumonia continues to give a high death rate and this will continue until the quarters of the silver employees are modernized and made adequate. A survey showed that, with practically the same population, the out-of-date and unsanitary silver quarters at Páraiso had nine times as much sickness and loss of time from work as came from the modern village of Red Tank.

MENINGITIS.

The occurrence of cerebrospinal meningitis on the Japanese steamer *Anyo Maru*, en route from Yokohama to Callao, Peru, presented a novel and interesting problem in epidemiology. Between Yokohama and San Francisco there were several cases of this disease. Not being a maritime quarantinable disease it was not detained and after leaving Balboa, a port of call, there was recrudescence and the Peruvian authorities refused to receive the vessel. At the request of its owner, permission was cabled to return to Balboa, and, upon arrival on May 28, 1918, 585 passengers and 16 of the crew were disembarked. There had been 16 deaths on the ship, the last occurring

just after arrival at Balboa. Four acute cases were evacuated from the ship and three others developed within a few days. Large spinal and intravenous injections of Flexner's serum, frequently repeated, promptly relieved these cases, all of which recovered without paralysis or other sequela. Careful examination and reexamination showed that the remainder of the crew were not carriers, and, after carefully spraying all parts of the vessel with larvacide, so it would have to be cleaned out by steam and scrubbed by hand, the ship was allowed to continue to its destination. Five thousand six hundred and eighty-two plate cultures were made from throat swabs from 602 individuals and 103 carriers were detected. These were isolated, irrigated frequently with Dakin's solution and sprayed with Dichloramin-T and all but three gradually cleared up; these three were finally transshipped as carriers. Very large and frequently repeated intravenous injections of Flexner's serum after clinical diagnosis, even before spinal cultures are positive, are of curative value in the meningo-cæmic and rapidly fatal type of the disease which confronted us. Most of the cases that had died had been ill less than 30 hours.

VENEREAL DISEASES.

Since the American occupation our statistics show a fairly constant admission rate to hospitals and quarters of 12½ per cent from venereal diseases. Since 1904 there have been 27,633 cases of venereal disease actually treated in the Canal Zone by American physicians.

This problem has given us our greatest concern. The fact that the cities of Panama and Colon are in the exclusive sanitary jurisdiction of the United States and the police jurisdiction of Panama seriously complicates the matter. The alarming increase of these diseases among our soldiers forced the general commanding the department to issue General Order 26, which in effect was a quarantine against the terminal cities on account of venereal diseases, the widespread illicit sale of habit-forming drugs and alcohol abuse. (See remarks under Colon Hospital, Health Office, Panama, and Health Office, Colon.)

SMALLPOX.

Just as the schools were opening, this disease was introduced from some of the interior villages into the city of Panama. It had been 4 years since there had been a systematic vaccination of the population of the terminal cities. The entire population of the two cities has now been vaccinated and while cases are occasionally brought into the country, it has at no time approached epidemic form. A total of 133 cases were admitted from July 10, 1918, to December 31, 1918.

TUBERCULOSIS.

In the cities of Panama and Colon tuberculosis has increased due to over-crowding. Men, women, and children have been crowded into small 10′ by 10′ rooms—frequently as many as 10 or even 12 in such a room. All that was necessary to spread tuberculosis under the circumstances was to have an initial case. The health

officers of Panama and Colon initiated surveys in which they located hundreds of these small rooms in rented houses, many of them without windows or other means of ventilation. Rigorous enforcement of regulations requiring standard windows with fixed lattice ventilation at first brought vigorous protest from property owners, which, as the work progressed, and its benefits became evident, disappeared.

The Panama Red Cross, with the active support of the former Chief Health Officers, had added an anti-tuberculosis campaign to the already excellent child-welfare work they had been doing. The active support of the President of Panama and the constant and politic interest and supervision of the honorary President of the Panama Red Cross, brought to this work the sympathetic assistance of everyone in Panama interested in its welfare. At the suggestion of the Medical Director of the anti-tuberculosis campaign, the following program of work was approved, his original suggestion being amended so as to bring it in line with the best approved work in the States.

PLAN OF ANTITUBERCULOSIS CAMPAIGN OF THE PANAMA RED CROSS.

"Tuberculosis is the most frequent cause of death in adults in Panama. It is caused by a germ or seed called the tubercle bacillus. These germs are found in the fluid coughed up by victims of the disease, and, when so coughed up, they are spread from the sick one to others. Infants and small children, and adults weakened by other chronic diseases or by vice, are especially liable to the development of these disease germs when exposed to persons having the disease.

"Those having tuberculosis are too sick to work efficiently, and are therefore charges upon their families or upon the public treasury.

"The object of a national antituberculosis campaign is:

1. To effectively treat existing advanced cases so as to arrest the progress of the disease in as many of them as possible.

2. To systematically examine the well or those showing even the slightest indisposition, so as to detect tuberculosis in its incipient stages when it may be entirely relieved.

3. To prevent the dissemination of the germs or seed of the disease from those sick of it, to the well.

4. To relieve existing cases of ill-health and remove existing causes of ill health so as to build up average individual resistance to disease.

"The isolation of advanced cases in adequate hospitals is the best way to avoid the spread of the disease, and thereby these patients can at least be made far more comfortable and frequently may find their condition improved or even be cured. Those who improve sufficiently will then learn how to avoid being a constant menace in their own homes, and will be taught to lead a useful life, quite confident that with continued good nourishment and hygienic living in the open air they may live among their own people without danger to them.

"It is important to recognize that such a hospital is in reality more a school or university where the pupils are taught to get as well as possible and at the same time to so care for themselves that they will

neither infect their family or friends nor constantly reinfect themselves as the untaught are constantly doing. If the purpose of such a hospital were to isolate all cases of phthisis, we would need accommodation for more than 2,000 cases, with an initial cost of $800,000, and a maintenance cost of $562,500, which are both quite beyond our means and also would be unnecessary extravagance if we had the means.

"The spread of the disease can be prevented by:

1. Finding out where the patients live, keeping them under supervision, and teaching them how, and then obliging them to observe certain precautions which will minimize the danger of contagion.
2. Teaching those who live in the same house with a patient the way to prevent contagion, so that the necessary precautions will be taken.
3. Exacting vigilance so that the precautions and treatment be carried out with strict punctuality and that they lead a life likely to increase their power of resistance. This work, properly organized, should be executed by dispensaries located in different parts of the cities and in the provinces.

"The power of resistance or immunity can be defined in five essential parts:

1. Removal of any other existing cause of ill-health, as malaria or intestinal infections.
2. Good nourishment.
3. Good housing with adequate fresh air and without overcrowding.
4. Abstinence from all vices.
5. Avoiding fatigue by adopting work which will not over-tax the strength of the patient.

"The first part of this program would involve systematic examination of the blood of all the sick for malaria and of their bowel discharges for intestinal infections, either parasitic or bacillary, and the prompt and effective relief of either, when found. The second part would be to teach that good nourishment is then the thing to consider, that luxuries are unnecessary, and amusements should take a secondary place. The third part would be to implant the necessary measures for proper light and ventilation of all dwellings. The fourth part would deal with the establishment of proper laws against intoxication; the prohibition of opening drinking saloons on holidays; the suppression of canteens kept by women; lectures against alcoholism, even in the schoolroom, eventually abolishing the manufacture of alcohol; and applying vigorously the law against selling cocaine, morphine, opium, and other habit-forming drugs. For the fifth part it is only necessary that the labor laws be put in practice and that work for those susceptible to tuberculosis be wisely chosen for them.

"This phase of the campaign comprises a large and complex work. In the first instance comes the necessity to destroy the sputum which is the principal cause of contagion, and experience in the Red Cross Dispensary has shown the keen desire on the part of the patients and of their relatives to adopt the precautions indicated by the doctors. I am convinced that this must be the prime object of the campaign because the sputum, in my opinion, in Panama, is the only source of contagion, and because precautions against sputum and particles ejected by patients when they cough are easily understood by the

general public, and do not clash with established customs, which is often the cause of the failure of many attempted social reforms. This does not imply that other precautions will be overlooked, since, although of secondary importance, they exercise much influence in the resisting power of the patients, and they will correct the errors, prejudices, and ignorance of the past. The old habits and ideas are so deeply rooted that they can not be destroyed in a day. A methodical and patient teaching should be adopted avoiding any violent action which would cause displeasure and rebellion as has sometimes happened when governmental or scientific impositions have hurt personal interests by want of knowledge of existing conditions at the time when new rules are established.

"The campaign, accordingly, should be established on the following lines:

Creating, first of all, the Directorate General of the Antituberculosis Campaign, composed of one of the Secretaries of State (Hacienda or Fomento) with the two Presidents of the Executive Committee of the Panama Red Cross, the Treasurer and the Secretary of the same committee and the Director of the Tuberculosis Clinic of the Panama Red Cross. This would create a Directorate composed of one representative of the Government, three prominent members of our social world, and two doctors, one of whom is the Chief Health Officer of The Panama Canal. They would develop:

1. The necessary dispensaries. Two in the city of Panama besides the one already established in the Red Cross building. Two for the city of Colon. One for the principal town of each province in the Republic.

2. Two sanatoriums with accommodation for 500 patients or more, one within the limits of the city of Panama, and the other in a place where conditions of altitude, climate, and means of communication would be found the best in the Republic.

"The dispensaries would have the following personnel: In Panama for each dispensary, a doctor, a nurse, and one assistant doorkeeper, to attend each of the three clinics, and the necessary public health nurses who could go into the homes of the people with instruction and demonstrations; each clinic to be opened two days a week for two hours each day, for the examination of the patients. In the other towns, the personnel would be adequate to the local requirements.

"Each dispensary will keep a minute clinical report of every patient. Each patient will be visited daily by a nurse who will supply sanitary sputum cups and handkerchiefs and a waterproof bag where all these things will be collected after use; these bags to be collected and burned daily so as to insure the destruction of the bacilli. The doctors will supervise the nurses and instruct the patients and their relatives in the precautions they should take, and will report to the Directorate cases, which by their advanced condition or their poverty, or because of danger of spread of the disease from them—should be sent to hospital. The Directorate will decide on each case after due inspection.

"Wishing to economize as much as possible, the police doctors, or other doctors receiving pay from the Government, when thoroughly qualified and interested in this work, will be chosen for each dispen-

sary, giving them a small increase of salary to be paid from the funds of the antituberculosis campaign, to remunerate them for the four hours a week which each doctor will devote to this work. For porters and collectors, preference will be given those who have worked in the dispensaries.

"The Government taking into consideration this new duty imposed on the doctors will exact that they have a clinical and bacteriological knowledge of the detection of the bacilli of Koch, as a *sine qua non*, and that doctors and nurses systematically secure specimens from the sick and others exposed to them for examination at the laboratories for malaria and intestinal parasites, especially in towns which have no laboratory."

It is unfortunate that the government of Panama has been so hampered for funds that the work has not made the progress necessary to even markedly lessen the ravages of the disease. For cases occurring in employees or in their families or in others brought to the Isthmus during the Canal construction, for whom we have at least moral responsibility, the Canal should establish and construct a cottage farm sanatorium where, while the disease is being arrested, these people could be taught to become self-supporting while doing light agricultural or truck garden work in the open air.

BUILDING INSPECTION.

Since 1913 all building inspection in Panama and Colon has been done by the Health Department. A sanitary inspector was detailed as building inspector. At the suggestion of the Resident Engineer of the Building Division, a competent building inspector has just been transferred to the health office, Panama, who is now giving competent advice to those desiring to improve buildings in Panama, as well as requiring those who have already built them on the wrong plan from a health standpoint to make such modifications as may be found necessary. This is one of the most important elements in the working of the health department of the two cities as defective tenement rooms heretofore erected have been one of the two main causes of the rapidly increasing tuberculosis rate, both among our employees and the citizens of the terminal cities. The housing problem in the Zone deserves as much and as careful study.

A survey of the Paraiso District was made showing that more than 50 of the old native houses had been permitted to remain in which conditions were even worse than in any of those in either of the cities. Besides this, many of the tenants in these miserable places were colored bachelor women who had been run out of the cities by the venereal campaign. As soon as this was brought to the Governor's attention these houses were ordered demolished, but in many of the older type quarters for silver employees over-crowding of the most vicious sort persists and this matter will receive careful attention and correction as soon as the financial difficulties caused by the war, are overcome. Plans have been submitted to and approved by the Building Division which will make future quarters for the laborers comply with all the sanitary necessities in the tropics.

GARBAGE, FLIES, AND MANURE.

The absence of flies in the Canal Zone is one of the most striking things to a visitor. It is even more remarkable that they are practically nonexistent in the city of Panama. This is because all manure and garbage are removed and disposed of once each day. At Corozal Hospital compost pits for manure have been built which are models. They are built square, of concrete and there are six of them together. They are located just at the edge of a little rise so that the carts dumping manure into them drive over the upper road and those loading the cured manure get it from the bottom of each pit on a lower road. The roads are concrete. As each pit is filled it is tightly closed for six or eight weeks. A common drain from all the pits runs into a cistern whose contents are constantly sprinkled over the gardens previous to planting. There is no fly breeding about these pits nor in the cured manure, although the green manure going into them is fairly alive with larvæ.

MEAT INSPECTION.

The inspection of meat and meat products has made rapidly increasing demands on the department. The Canal Zone has not only supplied its own necessities for meat, but has furnished large quantities for the Army. As local beef is finished on grass, it was at first difficult to comply with the standard set by the Army, based on corn-finished stock. Our inspectors have supervised the slaughter of more than 100 head of cattle per day, and the double transshipment and freezing of this meat without adequate facilities. The modern abattoir and cold storage plant being erected at Cristobal will provide the very latest scientific equipment for handling a greater volume of business. A microscopic examination of a smear from the spleen of every animal slaughtered is made for anthrax. From these smears a number of evidently subacute cases of anthrax were discovered which had given no clinical symptoms. Upon the discovery of such cases, killing was stopped, the carcass and everything that came in contact with it was destroyed and the floor and equipment thoroughly disinfected. All meat shipped is under the eye of an inspector until in the refrigerator aboard ship. Meat for local consumption receives the same rigid inspection and the people of the Canal Zone have at all times had an ample supply of beef from healthy cattle. Every patriot here has shared in the pride we all feel that the best looking beef goes to our soldier boys, and this is barely tempered by the fact that what has been retained for home consumption is quite as nutritious, but from smaller cattle.

The opening of the new municipal abattoir in Colon will insure to the residents of that city the same high grade beef and other meat products as obtained by residents of the Zone. The abattoir for Panama has been located and the unsightly and unsanitary structure heretofore used will soon be replaced by modern equipment. It will be necessary to extend our inspection to these abattoirs at once.

EXAMINATION OF SILVER EMPLOYEES.

During the year, in connection with the new photo-metal check system with all employees, a physical examination of the silver employees was undertaken for the first time. As there were between 15,000 and 20,000 of them this involved a considerable amount of work. As slight defects were discovered in these people they were ordered into the hospital for operation or treatment, and the cases which ought not to be at work were sent to Corozal Farm for observation and lighter work. This systematic examination of all employees should be repeated each year and should gradually be extended to their families.

VITAL STATISTICS.

EMPLOYEES.

The average number of employees on the rolls of The Panama Canal and the Panama Railroad, for the year was 25,520, as compared with 32,589 for 1917, and 33,176 for 1916.

The total admission rate to hospitals and quarters was 405.67 as compared with 356.75 in 1917, and 282.76 in 1916. For disease alone the admission rate to hospitals was 136.60, as compared with 124.80 in 1917, and 103.72 in 1916. The total admission rate to hospitals only was 163.17, as compared with 160.85 in 1917, and 140.43 in 1916.

The total death rate was 8.11 as against 7.09 in 1917, 6.03 in 1916, and 5.77 in 1915, and 7.04 in 1914. The death rate from disease alone was 7.13, as against 5.74 in 1917, and 4.58 in 1916.

The constantly noneffective rate from all causes was 11.19, as compared with 9.65 for 1917, and 9.20 for 1916.

The admission rate for malaria, to both hospitals and quarters, was 18.55, as compared with 14.51 for 1917, and 16.49 for 1916. The noneffective rate for malaria was 1.13, as compared with 0.48 for 1917, and 0.59 for 1916.

The admission rate for typhoid fever was 0.24, as compared with 0.18 for 1917, and 0.66 in 1916. No deaths from typhoid fever among employees occurred during the year.

The five diseases causing the highest number of hospital discharges with their rates were as follows:

	1917.		1918.	
	Discharges.	Rate.	Discharges.	Rate.
Influenza	186	5.71	552	21.63
Malaria	449	13.78	432	16.93
Venereal diseases	626	19.21	378	14.81
Tuberculosis	83	2.55	184	7.25
Diseases of the eyes and their annexa	98	3.01	88	3.45

The five diseases causing the highest number of deaths, with their rates were as follows:

	1917.		1918.	
	Deaths.	Rate.	Deaths.	Rate.
Tuberculosis (various organs)	36	1.10	46	1.80
Lobar pneumonia	29	.89	28	1.10
Nephritis (acute and chronic)	21	.64	19	.74
Organic diseases of the heart	22	.67	16	.63
Cerebral hemorrhage	8	.24	6	.24

There were 46 deaths from tuberculosis among employees, as compared with 36 in 1917, and 36 in 1916. From pneumonia 28 deaths occurred among employees in 1918, as compared with 29 in 1917, and 31 in 1916.

EFFECTS OF RACE.

The admission rate to hospitals and death rate from disease, for white employees, was 237.98, and 3.63, as compared with 115.43 and 7.86 for black employees.

The admission rate to hospitals and quarters for malaria was 14.07 for whites, as compared with 19.47 for blacks.

The admission rate to hospitals for disease for Americans was 218.55 and the death rate from disease 3.38.

Canal Zone.

EMPLOYEES AND NONEMPLOYEES.

From the average population of 22,290 in the Canal Zone, there was a total of 236 deaths during the year. Of these, 216 deaths were from disease, giving a rate of 9.69 as compared with 9.91 for 1917, and 9.22 for 1916.

The death rate for tuberculosis was 1.84, as compared with 1.31 for 1917. Deaths from tuberculosis this year were 17 per cent of all deaths.

There were 725 births reported during the year, giving a birth rate of 32.69. Of these, 255 were white and 470 black.

There were 60 deaths which occurred among children under 1 year of age, 5 white and 55 black, giving an infant mortality rate based on the number of births reported for the year, of 19.61 for white and 112.77 for black children, with a general average of 127.06 per 1,000 births.

Of the total deaths, 25 per cent occurred among children under 1 year of age, and 38 per cent among children under 5 years of age.

Of the total births reported, 6 per cent were stillbirths.

Below is a table showing the death rates for the Canal Zone from 1905 to 1918, inclusive, including deaths from all causes among both employees and nonemployees:

Year.	Population.	Deaths.	Rate per 1,000.	Year	Population.	Deaths.	Rate per 1,000.
1905	23,463	828	35.29	1912	79,279	1,129	14.24
1906	34,095	1,700	49.86	1913	61,700	1,047	16.97
1907	54,036	1,708	31.60	1914	46,379	710	15.31
1908	67,146	1,273	18.95	1915	31,946	410	12.83
1909	76,900	1,025	13.33	1916	31,447	343	10.91
1910	86,465	1,251	14.47	1917	27,543	313	11.36
1911	90,434	1,385	15.32	1918	22,290	216	9.69

Average population, excluding military population for last six months of 1917 and for the year 1918.

Panama City.

EMPLOYEES AND NONEMPLOYEES.

The population of the city, as shown by the health department census of June, 1917, is 61,369.

From a population of 61,369, there was a total of 1,314 deaths during the year. Of these 1,284 were from disease, giving a rate of 20.92, as compared with 27.19 for 1917, and 28 for 1916.

The principal causes of death, as compared with last year, were as follows:

	1917.	1918.
Tuberculosis (various organs)	319	254
Diarrhea and enteritis (including colitis)	332	165
Pneumonia (lobar and broncho)	213	146
Nephritis (acute and chronic)	92	90
Organic diseases of the heart	80	63

The death rate from tuberculosis was 4.14, as compared with 5.22 for 1917, being 19 per cent of the total deaths this year, as compared with 18½ per cent for 1917.

There were 2,308 births reported during the year, giving a birth rate of 37.61.

There were 412 deaths among children under 1 year of age, giving an infant mortality rate, based on the number of births reported for the year, of 178.51.

Of the total deaths, 31 per cent occurred among children under 1 year of age, and 42 per cent among children under 5 years of age.

Of the total births reported, 7 per cent were stillbirths.

Below is a table showing the death rate in Panama City from 1905 to 1918, inclusive, including deaths for all causes among both employees and nonemployees:

Year.	Population.	Deaths.	Rate per 1,000.	Year.	Population.	Deaths.	Rate per 1,000.
1905	21,984	1,447	65.82	1912	47,057	1,380	29.33
1906	25,518	1,142	44.75	1913	47,172	1,507	31.95
1907	33,548	1,156	34.45	1914	53,948	1,863	34.53
1908	37,073	1,292	34.83	1915	60,373	1,810	29.98
1909	40,801	1,038	25.44	1916	60,778	1,765	29.04
1910	45,591	1,446	31.72	1917	61,074	1,714	28.06
1911	46,555	1,456	31.27	1918	61,369	1,314	21.41

COLON.

EMPLOYEES AND NONEMPLOYEES.

From an average population of 26,078, a total number of 616 deaths occurred during the year. Of these, 587 were from disease, giving a rate of 22.51 from disease alone, as compared with 25.29 for 1917 and 26.81 for 1916.

The principal causes of deaths, as compared with last year, were as follows:

	1917.	1918.
Tuberculosis (various organs)	113	116
Pneumonia (lobar and broncho)	95	91
Diarrhea and enteritis (including colitis)	74	54
Bronchitis (acute and chronic)	55	51
Nephritis (acute and chronic)	61	45

The death rate from tuberculosis was 4.45, as compared with 4.45 for 1917, being 19 per cent of the deaths this year, as compared with 17 per cent for 1917.

There were 795 births reported during the year, giving a birth rate of 30.48.

There were 148 deaths among children under 1 year of age, giving an infant mortality rate, based on the number of births reported for the year of 186.16.

Of the total deaths, 24 per cent occurred among children under 1 year of age, and 37 per cent among children under 5 years of age.

Of the total births reported, 8 per cent were stillbirths.

Below is a table showing the death rate in Colon from 1905 to 1918, inclusive, including deaths from all causes among both employees and nonemployees:

Year.	Population.	Deaths.	Rate per 1,000.	Year.	Population.	Deaths.	Rate per 1,000.
1905	11,176	553	49.48	1912	20,174	493	24.44
1906	13,651	703	51.42	1913	20,232	489	24.17
1907	14,549	571	39.24	1914	23,265	590	25.36
1908	15,878	418	26.32	1915	29,331	640	21.82
1909	17,479	396	22.65	1916	24,693	696	28.19
1910	19,535	514	26.31	1917	25,386	667	26.27
1911	19,947	527	26.42	1918	26,078	616	23.62

ANCON HOSPITAL.

All of the new permanent buildings have been completed with the exception of Sections "C" and "D" which are well on toward completion.

ADMINISTRATION-CLINICS BUILDING.

This well-planned reinforced concrete structure stands well back from the main stairway entrance to Ancon Hospital, and by its location and size dominates the entire group of buildings, which now house the hospital. At the front, approach to the building is by means of broad sidewalks, while at the rear, covered passageways radiate to other sections of the hospital, making it possible for patients and personnel to go back and forth as may be necessary without detriment or inconvenience, irrespective of weather conditions.

The building is occupied as follows: *First floor*, Chief of Medical Clinic, Eye and Ear Clinic, X-ray Clinic, Admitting Office, and General Waiting Room. *Second floor*, Superintendent and office force, Library and Files. *Third floor*, Surgical Clinic. *Basement*, Pharmacy, Linen Room, and Storerooms. Access to the several floors is by means of an electric elevator and by broad stairways in each front corner of the building.

The service needs of patients and personnel are fully answered in the design of this building, which should be ample for the requirements of the hospital indefinitely. The equipment installed is modern and complete, and, so far as possible, of material which does not deteriorate in this climate.

ADMINISTRATION.

The Superintendent and office force since January have been located in their permanent quarters in the Administration-Clinics Building, occupying the entire second floor.

In the north wing is located the Superintendent's private office and anteroom, the Library, Reading and Board Room, two sets of bachelor quarters, stationery storeroom, and janitor's closet. The entire central section is occupied by the clerical force, the public and working portions being separated by an open-work grill.

The south wing contains an office used by Home Service Committee, Canal Zone Chapter, American Red Cross, clerical staff's lockers and toilets, and a spacious fireproof filing room, where case histories of patients, now some 215,000 in number (formerly filed on open wood shelving) are now housed in dustproof steel filing cases, as well as all other letter and card index files.

SURGICAL CLINIC.

In February, the surgical clinic moved from building 240 into its permanent quarters in the Administration-Clinics Building occupying the entire third floor, when new furniture and surgical equipment costing nearly $5,000 was installed.

In the north wing are located four operating rooms in a line, each with built-in instrument cabinets; lighted by day with large skylights, and by night by shadowless electric light fixtures. The operating rooms open into a wide corridor on the opposite side of which are located the sterilized linen storeroom, electric autoclave room, surgeon's scrub-up room, and a room containing electrically operated apparatus for hot and cold sterile water, distilled water, saline solution sterilizer, instrument sterilizers, and sinks.

The central portion of the third floor has on the north side, the anesthesia room, soiled linen room with chute to basement, elevator and stairs. In the center at the front are the surgeon's lounging-room, lockers, toilets, and baths; at the rear, waiting space for clinic cases, public toilets, and quarters for colored attendant.

On the south side are located stairway, nurses' office, men's (clinic) examining room, and office of Chief of Surgical Clinic.

The south wing contains clinic laboratory, women's clinic examining room, and emergency sterilizing room (for steam apparatus) and on opposite side the nurses' rest room, two emergency examining or operating rooms, linen room, etc.

During the year 1,784 major operations and 4,424 minor operations were performed. Three thousand eight hundred and eighty-one cases visited the out-patient department, for whom 718 prescriptions were written. Three hundred and twenty-one obstetrical cases were delivered.

MEDICAL CLINIC.

This clinic is now located in its permanent quarters in the south corner of first floor of the Administration-Clinics Building, and contains an office for Chief of Clinic, women's examining room, dressing room, and men's examining room, in which is also located the clinic laboratory. Two thousand eight hundred and eighty-four cases were treated in the out-patient department, for whom 1,908 prescriptions were written.

EYE AND EAR CLINIC.

This clinic is now installed in its permanent quarters in the south wing, first floor, Administration-Clinics Building.

The Clinic has an office and general examining room; refracting tunnel and dark room; operating room; rest room and waiting rooms for both white and colored patients.

The following new apparatus was placed into service:

Opthalmometer; perimeter; phorometer; optometer; refraction cabinet; operating table; electric cautery; aviation examining chair (Barany). Six thousand nine hundred and ninety-six cases visited the out-patient department, for whom 1,698 prescriptions were written. One thousand three hundred and twelve refractions were made, 1,088 operations performed. Also, a large number of candidates for Aviation Section and Medical Officers Reserve Corps were examined, and cases visited at Palo Seco Leper Asylum and Corozal Hospital for Insane.

X-RAY CLINIC.

In January this clinic was moved to its permanent quarters and is now located in the north wing, first floor, Administration-Clinics Building. The rooms occupied are office for Chief of Clinic, X-Ray and Therapeutic Room, transformer and machinery room, developing room, file room, supply storeroom, and white and colored patients' waiting rooms.

The following new equipment was installed: High tension transformer; horizontal-vertical fluoroscope; localizing devices; Coolidge and gas tubes for radiographic, fluoroscopic, and treatment work. Two thousand four hundred and twenty-three cases were handled, 6,243 plates and 687 dental films taken, 49 treatments given.

LINEN ROOM.

In February, three rooms (one a large storage room) were set aside in basement as linen rooms. The work was placed in charge of a qualified nurse with three colored seamstresses and two male attendants. Preparation of linen for hospital purposes has been concentrated in the hospital linen room, thereby effecting great economy and efficiency in handling linen supplies.

All linen is received direct from Ancon laundry and redistributed, all articles receiving a rigid inspection before being sent out, and necessary repairs made at once. Surveyed sheets, table linen from messes and hotels, etc., are utilized whenever obtainable for making bandages, vulvar pads, etc., instead of using new gauze.

DISEASES.

The new isolation building was occupied in July. It is a three-story reinforced concrete building, with basement, and has a normal capacity of about 90 patients.

In the basement are located orderlies' room, receiving ward, nurses' and doctors' office, sterilizing rooms, elevator machinery, storeroom, etc. On the first floor are located two 4-bed wards, 9 private rooms, with all necessary service rooms, kitchen, physicians' and nurses' office and bedroom, colored helpers' rooms, etc. The second and third floors have each two 11-bed wards, 3 private rooms, and necessary service rooms, dining room, pantry, kitchen, offices, examining rooms, etc.

The hospital was congested at times since July due to the number of epidemic influenza cases treated, with pneumonia complications.

One hundred and twenty-six cases of smallpox were admitted during the year with no deaths. Three thousand five hundred and forty-five adults were vaccinated with 1,119 known "takes;" and 187 school children with 98 known "takes."

NURSES' QUARTERS.

The new nurses' quarters is a three-story with basement reinforced concrete building, containing 69 bedrooms, two sitting rooms, an office, tea room, kitchen adjoining, and reception room, and in basement a small laundry and trunk storeroom.

STEWARD'S DEPARTMENT.

The new kitchen-mess halls building, which was occupied in March, is a reinforced concrete structure of two stories, with basement under part of south end of structure. New kitchen and dining room equipment was installed at a cost of $10,000.

In the basement are located the bake shop, refrigerating machinery room, elevator machinery room, diet dispatch room, locker room, and toilets for kitchen help.

On the first floor are the refrigerating boxes (three small compartments for eggs, milk, vegetables, and one large box for meats., etc., and a freezing room), butcher shop, storeroom, diet kitchen, scullery, dining rooms for colored attendants, patients, and personnel, male and female.

On the second floor also there are dining rooms for doctors and nurses, and white convalescent patients with service room common to both, food being handled on three electric dumb-waiters.

Electric heating has supplanted ranges burning coal and charcoal. The ovens of bakery are designed to burn fuel oil.

The power plant is located in building immediately adjacent to the kitchen. Two new 40-horsepower cylindrical return tube boilers, burning oil as fuel, were put in operation the latter part of June.

One hundred and eighty-two thousand three hundred and thirty-two rations were issued to hospital patients and 69,136 rations to personnel entitled to same; a total of 251,468 rations at a cost of $79,216.57.

Twenty-four thousand seven hundred and forty-five rations were issued to pay mess boarders, repayment for which amounted to $17,162.81.

One hundred and forty-four thousand one hundred and forty-three pounds of bread were baked from 110,644 pounds of flour at a cost of $8,991.09.

ANCON HOSPITAL COMPARATIVE STATEMENT.

	1918.	1917.	1916.	1915.
Report of patient days	319,908	311,451	270,294	268,945
Cost of subsistence per patient per day	$0.315	$0.3369	$0.2522	$0.2372
	1914.	1913.	1912.	1911.
Report of patient days	338,901	423,251	415,009	424,416
Cost of subsistence per patient per day	$0.253	$0.217	$0.209	$0.213

MOVEMENT OF PATIENTS, NONRESIDENTS OF CANAL ZONE.

	1917.	1918.
Total number treated:		
Ancon Hospital	274	510
Corozal Hospital	76	76
Total	350	586
Died:		
Ancon Hospital	7	9
Corozal Hospital	3	10
Total	10	19
Days treated:		
Ancon Hospital	5,101	7,667
Corozal Hospital	21,396	20,431
Total	26,497	28,089

CHRONIC PATIENTS.

	1918.	1917.	1916.	1915.	1914.[1]	1913.
Total number treated	38	63	52	58	55	.....
Total number days treatment	9,603	9,836	9,174	9,801	3,409	.....
Average number patients per day	26	27	25	26	28	.....
Average per capita cost	0.2602	0.2520	0.2400	0.2503	0.327	.....

[1]September 1 to December 31, 1914.

MOVEMENT OF MILITARY PATIENTS.

	1918.	1917.	1916.	1915.	1914.	1913.
Total number of admissions	4,165	2,469	1,937	1,771	1,458	394
Total number of days relief	49,067	33,494	28,519	24,643	19,506	5,850
Number constantly sick	134.49	91.76	78.13	67.51	53.40	16.00

GAUZE USED.

Yards	14,750	80,725	87,585	105,825	132,744	182,699
Cost	$867.44	$2821.39	$2159.78	$2685.22	$3612.22	$4169.80

BANDAGES USED.

Dozens	440½	1,559½	1,871	2,311	2,077	2,416
Cost	$283.02	$945.79	$900.61	$1115.59	$1062.75	$1401.25

STATISTICAL SUMMARY.

Cases admitted to Ancon Hospital during year	12,153
Cases admitted to Corozal Hospital during year	229
Chronics admitted to Chronic Ward during year	15
Crippled employees to Corozal Farm during year	39
Total	12,436
Major surgical operations	1,784
Minor surgical operations	4,424
Eye and ear operations	1,088
Total	7,296
Refractions	1,312
Obstetrical cases delivered	321
Deaths during year in Ancon Hospital	336
Deaths during year in Corozal Hospital	73
Total	409
Out-patient Dept. (Medical, Surgical, Eye and Ear Clinics):	
Total visits	14,276
New cases	7,760
Prescriptions written	4,230
Dispensary (District Physician) total treated	92,201

BOARD OF HEALTH LABORATORY.

The past year was characterized by numerous changes in the laboratory personnel and by routine work greatly in excess of that to which the institution has been accustomed. As a consequence members of the staff were unable to avail themselves of the many opportunities for research and the amount of material for publication compares unfavorably with that produced by the former permanent organization.

Of principal scientific interest was work done under the direction of Maj. Oscar Teague in connection with an epidemic of cerebrospinal meningitis which appeared aboard the Japanese steamer *Anyo Maru*. In this the entire laboratory force participated and 585 first and second class and steerage passengers were under observation. Five thousand six hundred and eighty-two plate cultures were made and numerous subcultures and agglutination tests were necessary. Three carriers persisted over a period of four months and were transshipped as such. The results of this work are in Major Teague's hands for publication.

Following the laboratory custom, as much attention as time permitted was given to the blood parasites of animal and man. Major Teague made several trips to the interior and prevented epidemics of Murrina by condemning infected animals. He also checked a beginning epidemic of the same nature in an army pack train. Confirming observations of previous years piroplasmata were found in the blood of 3 American horses and 1 mule. The organism which apparently conforms to descriptons of *P. Caballi* caused the animals but little inconvenience and after mild febrile symptoms they returned to duty. Inoculation of imported American cattle with blood of tick-infested native animals was continued and three heifers were allowed to acquire natural infection; tick infestation being controlled by careful watching and frequent dipping. Animals treated by both methods are at the present time in good condition,

During the year it was possible for the pathologist to examine thick blood smears from 1,116 Ancon and Santo Tomas ward patients for filaria Bancrofti, the blood being taken at night or in the early morning. Of these 34 were found positive but in no case were clinical symptoms referable to the presence of filaria. In the series were 100 prostitutes with 2 positive; the group being examined night and morning. In a separate series 100 Porto Rican soldiers were examined and 5 found positive. Among the 253 autopsies were none which merit special attention in this report. Decrease in the yearly number of autopsies was due to the low death rate of February and March and increasing opposition on the part of families of ward patients. Tissue examinations, animal autopsies, and rat examinations were carried on as usual.

In the last half of the year the laboratory which is charged with the care of biologic products received by the health department issued vaccine in large quantities. During September an officer attached to the organization observed a large number of failures of smallpox vaccine in previously unvaccinated children, though the technique employed had been followed by 100 per cent of vesicle formation in previously unvaccinated individuals in the United States. These failures were undoubtedly due to faulty methods of transportation and storage of smallpox vaccine and emphasize the necessity for following up cases after vaccination and a careful checking of the manner in which biologic products are handled after they have left the laboratory.

Influenza.

In November a special study of the bacteriology of influenza cases was begun. Owing to the custom of embalming the bodies of white persons dying on the Zone, this study has practically been limited to the sputums of cases admitted to Ancon Hospital.

Mice not being available the sputum from each case was washed in saline and smeared on human blood agar plates. Unless classified as staphylococci, *M. catarrhalis*, or *B. influenzæ*, resulting colonies were transferred to broth, tested for bile solubility and behavior toward lactose, mannit, inulin, and salicin. Though especial attention was given to colonies occurring in the hemolytic zones surrounding various staphylococci, *B. influenzæ* was only isolated in one instance from the blood plates.

In 20 sputums examined streptococci were found to be the predominating organisms, 10 varieties having been determined. Of these 3 were hemolytic, 3 green producers, and 4 with no zone or color formation. Of the green producing streptococci, 1 is of special interest in that it decolorizes blood corpuscles without destroying them, thus apparently occupying a middle ground between the hemolytic and nonhemolytic streptococci. This organism was isolated in every one of a group of 7 sailors from Coco Solo.

Among all these streptococci there was a strong tendency to diplococcus formation, but in no instance was capsule formation or bile solubility observed. In the absence of the latter characteristic we have not considered any of these organisms pneumococci.

Pathological Report.

During the calendar year of 1918, 253 autopsies were performed, the causes of death being as follows:

General diseases.

Malaria, estivoautumnal	6
Pyemia	2
Pellagra	3
Tuberculosis of the lungs	57
Tuberculous meningitis	6
Potts' disease	1
Tuberculosis, disseminated	5
Syphilis, tertiary	3
Cancer of the liver	1
Cancer of the uterus	1
Cancer	3
Diabetes	1
Sarcomatosis	1
Leuchemia (lymphatic)	1
Septicemia	1

Diseases of the nervous system and of the organs of special sense.

Simple meningitis	2
Cerebrospinal meningitis	3
Meningitis pneumococcic	5
Meningeal hemorrhage	1
General paralysis of the insane	1
Epilepsy	2
Apoplexy	5
Cerebrospinal syphilis	1
Concussion of the brain	1
Dementia precox	1
Exhaustive psychosis	1

Diseases of the circulatory system.

Malignant endocarditis	1
Organic diseases of the heart	8
Aneurysm	4
Arteriosclerosis	10
Hemorrhage	1
Rupture of the coronary artery	1
Post-operative hemorrhage	1

Diseases of the respiratory system.

Broncho-pneumonia	9
Lobar pneumonia	29
Empyema	1
Gangrene of the lungs	1
Pleurisy (acute fibrinous) with effusion	1
Acute bronchitis	1
Edema of the lungs	1

Diseases of the digestive system.

Diarrhea and enteritis (under 2 years)	1
Colitis	2
Diarrhea and enteritis (2 years and over)	2
Cirrhosis of the liver	1

Stricture of esophagus	3
Dysentery, entamebic	1
Abscess of the liver, unqualified	2
Acute peritonitis (simple)	3
Acute peritonitis (purulent)	1
Uncinariasis	2
Ischio-rectal abscess	2
Acute gastritis	1
Acute interstitial hepatitis	2

Nonvenereal diseases of the genito-urinary system and adnexa.

Acute nephritis	2
Chronic nephritis	12
Pyelo-nephrosis	3

The puerperal state.

Puerperal septicemia	1
Puerperal hemorrhage	1
Hyperemesis gravidarum	1

Diseases of early infancy.

Atrophy of infants	1
Malnutrition	19

Affections produced by external causes.

Acute poisonings	1
Accidental drownings	1
Traumatism (railroads)	1
Homicide by cutting instruments	1
Fracture of the skull	1
Dislocation of cervical vertebra	1
Cause undetermined	2

The most frequent causes of death recorded in the above series of autopsies were as follows:

	Cases.	Per cent.
Tuberculosis	68	26.8
Pneumonia	38	15.
Malnutrition	19	6.5
Chronic nephritis	12	4.7
Arteriosclerosis	10	3.9
Organic heart disease	8	3.1

The pathologist has collected interesting data showing the principal causes of death found at autopsy from 1904 to 1917, inclusive, and the variety of some diseases (cholera, plague) that are prevalent in many tropical countries. We shall present his tables, adding the records for 1918:

TABLE I.—*Showing the more common causes of death at autopsy in the Board of Health Laboratory.*

Date.	Number of autopsies per year.	Pneumonia.	Tuberculosis.	Hæmoglobinuric fever, malaria.	Affections produced by external causes.	Chronic nephritis.	Combined types of dysentery.	Organic heart disease.	Typhoid.	(Children), diarrhea and enteritis.	Cancer.
1904	6	1	1	.....	.....	.....	.....	.....	.....	.....	.....
1905	269	60	9	27	3	8	5	3	9	.....	2
1906	509	191	22	50	24	23	39	15	33	.....	2
1907	496	156	35	27	40	27	36	12	58	4	4
1908	361	59	63	46	26	25	23	11	14	.....	7
1909	295	55	37	26	32	31	11	17	11	1	5
1910	451	50	91	52	30	37	36	16	10	6	4
1911	508	83	102	41	38	36	19	20	9	11	11
1912	425	53	79	23	37	27	15	22	6	7	11
1913	460	47	89	21	34	26	8	26	5	23	12
1914	375	36	78	6	38	12	6	27	5	14	3
1915	328	28	56	14	20	12	5	14	2	15	10
1916	323	25	81	8	17	20	7	10	6	9	7
1917	330	24	51	5	21	23	3	18	1	3	5
1918	253	38	68	6	6	12	.....	8	.....	1	5
Total	5,389	906	864	352	366	319	213	219	169	94	89

TABLE II.—*Showing number of autopsies performed revealing the following diseases per year.*

Date.	Autopsies performed per year.	Yellow fever.	Beriberi.	Ankylostomiasis.	Tetanus.	Infectious diseases of children.	Plague.	Smallpox.	Snake-bite.	Cholera.	Filariasis.
1904	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1905	269	12	7	7	2	.....	1	.....	.....	.....	.....
1906	509	1	5	4	.....	.....	.....	.....	.....	.....	.....
1907	496	.....	1	2	1	.....	.....	.....	.....	.....	.....
1908	361	.....	1	2	3	.....	.....	.....	.....	.....	.....
1909	295	2	.....	.....	.....	.....	1	.....	.....	.....	.....
1910	451	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
1911	508	.....	1	1	1	.....	1	.....	.....	.....	.....
1912	425	1	.....	.....	1	4	.....	.....	.....	.....	.....
1913	460	.....	.....	2	3	1	.....	.....	.....	.....	.....
1914	375	.....	1	.....	4	2	.....	.....	.....	.....	.....
1915	328	3	1	.....	2	1	.....	.....	.....	.....	.....
1916	323	.....	2	.....	.....	3	.....	1	.....	.....	.....
1917	330	.....	7	.....	1	2	.....	.....	.....	.....	.....
1918	253	.....	.....	2	.....	3	.....	.....	.....	.....	.....
Total	5,389	21	26	20	18	16	3	1	.....	.....	.....

Five hundred and seventy bodies passed through the laboratory during the year, of which 253 or 44.4 per cent were autopsied. Seventy-nine bodies were embalmed and 256 were cremated.

During the year 15,642 Wasserman tests were performed on 11,992 persons including 1,167 prostitutes, as compared with 12,543 tests on 9,561 persons during the pervious year. The results of these tests are summarized in the following tables:

Wasserman Reactions During the Year 1918.

(Based on the number of individuals examined and not on the number of tests made.)

	Positive.	Negative.	Total.	Per cent positive.
White, civil:				
Males	178	1,388	1,566	11.3
Females	34	729	763	4.4
Children	1	15	16	6.2
White, soldiers, males	437	3,135	3,572	12.2
Total	650	5,267	5,917	10.9
Spanish and white natives:				
Males	106	341	447	23.7
Females	16	86	102	15.7
Total	122	427	549	22.2
Blacks and mulatoes:				
Males	1,008	2,310	3,318	30.0
Females	222	723	945	23.5
Children	8	55	63	12.7
Total	1,238	3,088	4,326	28.6
Chinese, males	10	23	33	30.3
Grand total	2,020	8,805	10,825	18.6
Prostitutes	642	525	1,167	55.0
Grand total (including prostitutes)	2,662	9,330	11,992	22.2

In addition Wasserman tests were made on 373 spinal fluids from as many individuals and of these 95 or 25.2 were positive.

During the year 687 throat cultures were examined for diphtheria of which 71 were found positive. The number of positive cases repeated were 26. Wasserman examinations were in excess of those of the previous year and their results are given herein.

Work of the chemical laboratory included quantitative and qualitative analysis of a varied nature. For analysis food products and commissary supplies were received from the Supply Department, fuel oils and metals from the Mechanical Division, fertilizers and soil from the Cattle Industry Division, drugs from the Medical Storehouse, milk and food products from the health offices and a great variety of material from private individuals. Specimens submitted by the hospital were of the usual routine clinical nature, urines, stomach contents, mother's milk, milk, and 335 spinal fluids upon which colloidal gold reactions and butyric acid, phenol and ammonium sulphate tests for globulin were made. Other than spinal fluids chemical examinations for the year numbered 528.

Entomological Department.

In the department of entomology, attention has principally centered upon classification and study of insect life injurious to food plants and fruit trees in the Canal Zone. Much of this investigation

was conducted in conjunction with a representative of the Department of Agriculture and its salient features are enumerated under a separate heading.

Medical entomology.—This consisted largely of the routine examination and determination of mosquito larvæ and adults, inspections of breeding areas and cattle camps, identifications of diptera other than mosquitoes, examination of food products for insect pests, and the determination of ticks and other arthropods This department cooperated with the United States National Museum by sending to Dr. Harrison G. Dyar, an authority on American mosquitoes, both larvæ and adults of Panamic forms. As a result of this, the following new species of *Culex* described by Doctor Dyar are added to our fauna: *C.* (*Chæroporpa*) *tecmaria*, *C.* (*Helcoporpa*) *menytes*, *C.* (*Melanoconium*) *dunni*, *C.* (*Melanoconium*) *zeteci*, and *C. Leucotelus.*

A study was begun of the ecology of Anopheles larvæ and adults, intended primarily to learn definite environmental conditions peculiar to each species.

The following table gives the record of identifications of mosquitoes made:

Mosquito Larvæ.

Culicini—	
Anopheles albimanus	65
Anopheles tarsimaculata	2
Anopheles argyritarsis	120
Anopheles pseudopunctipennis	138
Anopheles malefactor	18
Anopheles apicimacula	2
Anopheles eiseni	1
Total anopheles.....lots.	346
Aedes argenteus (-calopus)	16
Aedes spp.	12
Culex (16 spp.)	195
Lutzia allostigma	2
Haemogogus (3 spp.)	16
Mansonia (2 spp.)	3
Uranotaenia (2 spp.)	23
Psorophora, Orthopodomyia, etc.	12
Total culicini nonanopheles	279
Sabethini—	
Wyeomyia, Limatus, etc. (6 spp.)	11
Total number of lots of larvae	636

Mosquito Adults.

Culicini—	
Anopheles albimanus	5,186
Anopheles tarsimaculata	478
Anopheles argyritarsis	11
Anopheles pseudopunctipennis	696
Anopheles malefactor	68
Anopheles apicimacula	1
Total anopheles.....spms.	6,440

Mosquito Adults—Continued.

Culicini—Continued.		
Aedes argenteus (-calopus)		89
Aedes taeniorhynchus		1,083
Aedes spp		8
Mansonia titillans		4,049
Mansonia nigricans		117
Mansonia fasciolatus		164
Aediomyia squamipennis		10
Culex quinquefasciatus		538
Culex spp		710
Psorophora posticata		11
Lutzia allostigma		2
All others		43
Total cumilina nonanopheles	spms...	6,824
Sabethini—		
Sabethes, Wyeomyia, Limatus, etc		74
Total number of adults	spms...	13,338

During the months of July to October, inclusive, determinations of mosquitoes were practically discontinued in order to devote as much time as possible to the study of mill insects.

The following adult mosquitoes were examined for the presence of microfilariæ; same came from inside the nets in the bunks at cattle camps: 59 *Anopheles albimanus*, 28 *Anopheles pseudopunctipennis*, 181 *Mansonia titillans*, and 2 *Mansonia nigricans*. None were found.

Economic entomology.—Practically all this work was done with the cooperation of Mr. H. F. Dietz of the Bureau of Entomology, U. S. Department of Agriculture. A total of 385 distinct accessions were sent to the Bureau of Entomology, U. S. Department of Agriculture, for record and accurate determination. The following places were inspected: Plantations at Limon, Juan Mina, Bracho, Corozal, Venado, Summit, and several in the Las Sabanas region of Panama City; all piers and towns; warehouses and packing rooms of the Commissary Division at Cristobal and Mount Hope; the Mindi dairy farm and the Summit chicken farm. The following are among the more important insect pests found, arranged according to hosts:

Citrus.—The spiny citrus white fly, *Aleurocanthus woglumi*, at present confined to the terminal towns and parts of Las Sabanas and Taboga, is a serious pest and already 20 other hosts have been found for it on the Isthmus. It was probably introduced from the Hope Gardens of Jamaica, and as it is not as yet in the United States, special attention is given to prevent its introduction there. Another white fly, *Aleurothrixus flocosus*, was found at Juan Mina, but it is not serious; it is, however, very abundant on frangipanny, *Plumeria alba*. The following scales were found but their control is relatively simple: *Selenaspidus articulatus*, *Chrysomphalus aonidum*, *Lepidosaphes beckii*, and *Saissetia nigra* and *hemisphærica*; The bee, *Trigona ruficus corvina*, is very destructive to the young leaves, as is also the red-eyed citrus grasshopper. A stinging ant was found at Juan Mina to girdle the trunks of young trees and thus caused much real damage.

Papaya.—The papaya fruit fly, *Toxotrypana curvicauda* Gerst., was found at Balboa, Ancon, and Las Sabanas. It promises to

become a very serious pest of papaya fruit and difficult to control. The scale *Diaspis pentagoni* is quite common on trunks of papaya and a few trees were found dead, killed apparently by this scale.

Palms.—The principal pest of palms is the Isthmian coconut caterpillar, *Brassolis isthmiæ*, which causes heavy damage to the crowns. A power sprayer has been ordered and should be of great service in the control of such pests.

Banyan—(*Ficus indica*).—The banyan thrips, *Gynaikothrips uzeli*, is very abundant on all banyans seen. The scales *Chrysomphalus dictyospermi* and *personatus* are also present but do much less damage.

Bamboo.—All bamboo seen, almost, has scales, and some of them are very abundant, but as yet no signs of actual damage to the plant was noted.

Ornamental plants.—*Selanaspidus articulatus* and *Chrysomphalus aonidum* are very abundant, and spraying will be necessary in order to keep these pests under control.

Mango.—The glassy star scale, *Vinsonia stellifera*, is very abundant. The spiny citrus white fly is on mango as well but not heavy. Sooty mold at times is quite heavy. The most serious pests of mango is the mango weevil, *Sternochetus mangiferæ*, two specimens of which are in the collection.

Avocado pears.—At Frijoles a pyralid was doing some damage to leaves, but no indications of weevil injury were noted. At Ancon two specimens of a weevil very similar to *Heilpus lauri*, the avocado weevil, was found on the leaves of a small tree of this species. It is a serious pest once it becomes established.

Sour sop.—A tree near the laboratory was completely covered with the giant white fly, *Aleurodicus giganteus*, but nowhere else has this pest been found.

Sugar cane.—The West Indian sugar cane borer, *Metamasius sericeus*, was found breeding abundantly in banana stumps. This is a most serious pest of cane, and one easily introduced elsewhere.

Several species of fruit flies were bred out or found about fruit on piers, indicating that pests of this sort will be a continuous source of trouble here, and as they are hard to control, they will always cause much damage.

A large number of other economic and beneficial insects were collected and a general report will be published in an entomological journal covering the entire work in economic entomology.

Considerable time was given to the study of stored food products insects at Cristobal and Mount Hope. Due to inadequate warehouse facilities and to the strained conditions brought about by the war, the Isthmus was not prepared to store large quantities of food products, and as a result mill insects increased rapidly. Those most abundant were the following: Two species of moths, the rice weevil (*Calandra oryza*), Cadelle (*Tenebrcides mauritanicus*), confused flour beetle (*Tribolium confusum*), rust-red flour beetle (*T. ferrugineum*), saw-toothed grain beetle (*Silvanus surinamensis*), foreign grain beetle (*Cathartus advena*), rust-red grain beetle (*Læmophloeus ferrugineus*), cigarette beetle (*Lasioderma serricorne*), and the coffee bean weevil (*Arœocerus fasciculatus*). *Zabrotes pectoralis* was very abundant in beans and caused much damage. Where food products were badly

infested, they were condemned. As no heat fumigation was possible with the means at hand, our control measures consisted of the following: Carbon bisulfide fumigation for rice and corn and subsequent blowing. For flour, double siftings were practiced, and at the warehouse sacks were placed on racks; the buildings kept clean of all spilled flour and débris, adult insects were collected in grease traps at lights, and hand swatting was practiced to some extent. These measures reduced our infestation to a minimum. Later on a vacuum cleaner was added to the outfit and was very efficacious in keeping sacks clean of insects on the outsides.

Much experimental work was done with various fumigants to learn which were best for the control of mill insects, especially in the tropics. None were as thoroughly effective as heat at 140° F. for several hours. Samples of flour fumigated with hydrocyanic gas, carbon bisulfide, sulphur dioxide, pyrethrum, and heat, were kept each in tightly sealed glass jars for four months, the sulphur sample was brown and full of insects, the same was true of pyrethrum. Hydrocyanic gas had a few live larvæ, while carbon bisulfide and heat were absolutely 100 per cent effective. Of the two the heat was considered the best treatment.

Several species of mill insects were used in similar experiments; equal numbers were placed in single and triple pill boxes and these subjected to the various fumigants. After a fumigation they were examined and condition was noted; the same boxes were reexamined 24 hours later. With HCN we found that some of the rice weevils, apparently dead right after the fumigations, revived 24 hours later. The best results were obtained with heat and CS_2. A detailed report on these experiments is in preparation.

Surveys were made of all piers to note the presence of insects in cargoes which are serious pests and would likely be introduced at other ports through the channels of commerce. Much cacao, coffee, beans, flour, etc., were found infested, suggesting strongly the need of a vacuum fumigation unit at piers to fumigate such cargo and prevent the dissemination of pests over the whole world. The most important pest found was a tiny borer in ivory nuts which completely riddles these hard nuts. A shipment of several thousand sacks was completely infested, and these beetles were over the whole pier. Very close relatives of these, *Platypus* sp. and *Pyleborus grenadensis*, were found at Balboa and elsewhere boring freely into Sanday and other woods. These woods are used for crates, furnishing a splendid medium for the dissemination of pests throughout the world.

A systematic catalogue of the mollusks of Panama was published in the *Revista Nueva*, of Panama City, enumerating almost 900 species of mollusks from the Bay of Panama.

SEPARATE ADMINISTRATION.

I desire to recommend that the Board of Health Laboratory be separated as an administrative unit from Ancon Hospital. All of the organizations in the health department, as well as in the Republic of Panama, should be and are free to call upon this laboratory

for assistance at any time and the necessity of the duplication of reports made necessary by its connection with Ancon Hospital should be avoided.

During the year four young women technicians were added to the staff of the laboratory doing the routine work so that the chiefs of the various services would have more time for matters of special importance. The number of these technicians should be increased so that routine laboratory investigations can be undertaken for all of the hospitals.

Corozal Hospital.

No new buildings have been erected in the hospital. The isolation ward on the male side had to be turned over for use of working patients and we have no accommodations for tubercular or other contagious diseases.

The population for the close of the year was 216 males and 174 females, and at one time the population has gone up as far as 400. It is very essential that a new structure be erected soon to accommodate the population, which shows a tendency to increase.

We have continued to deport charity patients to their native homes, as soon as authority was given, but this has failed to relieve congestion.

During the dry season several wards were painted by the working patients, making the wards much brighter and more cheerful.

Various forms of amusements were continued, with the exception of band concerts, which were discontinued several months ago. It is hoped, as soon as the condition of the Army on the Isthmus becomes more routine, to obtain band concerts again. Occupational treatment has been continued with success, our garden producing $347 for the month of November and $306 for the month of December. Some of the female patients, besides making rugs, hats, etc., are being taught gardening, and it is hoped in the near future to turn over a part of the land to them for cultivation.

Permission has been obtained to establish a training school for orderlies and maids and steps are underway to organize the school. This will alleviate the great difficulty of getting nurses in the States. Orderlies and maids will be trained to assume charge of the wards, administer cold packs and drugs, but to be supervised by a gold employee. This plan will reduce the cost to a great extent.

The grounds within the hospital enclosure were turned over to the care of the male and female patients, respectively, which work they have carried out with great success.

Farm Department.

The farm has been reorganized. An expert farm manager has made large additions to the ground in cultivation and had it not been for several increases in pay given to the crippled employees during the past year the farm would have been on a paying basis now. Labor-saving machinery has been introduced, the cripples are more contented and the garden products are in increasing demand. Ar-

rangement by which patients are paid a small sum for work has greatly increased their interest and a large percentage of the inmates of the asylum are now busy in the gardens. When one sees these happy, productive, though insane laborers, actually making a living, it seems a pity that this form of therapy can not be introduced into the saner population of the tropics.

Dairy.

The dairy is conducted entirely by crippled and insane laborers. It is a profitable investment and furnishes a reliable source of excellent milk which is sold through the commissary on prescriptions for children. The raw milk of this dairy rarely has a bacterial count higher than 500 and the pasteurized product has never exceeded 50. This is due to the immediate cooling, pasteurization, and bottling of the milk.

Piggery.

We have continued the slop feeding of hogs with crippled and insane labor, developing a very profitable industry. With the new plant most of the slop from the Pacific end of the Isthmus will be converted into food in this plant.

Poultry.

With the development of the modern poultry plant of the Supply Department at Summit the necessity for the conduct of a poultry plant by the health department ended. This plant has been expensive and regularly nonproductive.

GENERAL REMARKS.

As previously recommended, new buildings for the patients should be erected, on a plan similar to the insane hospitals in the United States, whereby we could improve on the treatment of the patients and give them better care. The construction of an industrial building where the patients could be taken and taught various occupations and where adequate machinery could be installed for making brooms, brushes, slippers, mops, is suggested. This would facilitate the handling of the patients and enable us to find employment for many more, which would materially reduce the cost of running, not only for this hospital but for the health department, as these things could be made for the whole department. Many of the cripples whose work in the garden is unsatisfactory could be taught this kind of work, and, incidentally make them more useful to the community and less chargeable.

Most of our laundry is at present done by patients by hand and steps should be taken to secure some machinery. With the installation of this machinery we would be able to do all the laundry for this hospital, as well as for Ancon Hospital.

COLON HOSPITAL.

Hospital operations—The medical and surgical dispensaries are daily taxed to their limit and upon several occasions every available bed in the hospital has been occupied.

From the medical side the recent influenza epidemic with the importation of 22 soldiers from the transport *Kilpatrick* is to be noted. Ten of the 22 died.

On the surgical side the monthly average has been in the neighborhood of 90 major operations.

The cooperation of the hospital with the Colon prophylactic station in "cleaning up" the red light district is of especial interest. In combating this type of affliction, one must first get at and remove the source. Without this preliminary step all treatment is useless because reinfection is continually taking place. This was proven by the observations at the prophylactic station in comparing the cases that had been operated and those upon whom section had not been done.

It is also of interest to note that these people may have existing pus tubes, infected ovaries, and large walled-off abscesses and still be up and about without any apparent discomfort.

Laparotomy was performed upon 60 women. There were no deaths. The ages varied from 14 years up. The average stay in the hospital was from 10 to 20 days, the majority being discharged on about the twelfth day. Practically every nationality was represented.

Preoperative treatment consisted in enemas and douches and because of the fact that all cases were pus, cathartics were not resorted to until post operatively. It was noted that where this procedure was used convalescence was much shorter and that the post-operative course was uneventful.

At laparotomy all diseased tubes, ovaries, and the appendix were removed and wherever practicable hysterectomy was performed. In cases where the uterus was retained, especial attention was paid to carefully shorten the round ligaments that the uterus would properly drain.

Only in extreme cases was drainage resorted to. Due to the repeated infections an acquired immunity existed and absorption took place without any prolonged untoward symptoms.

While still in the hospital, douches were given daily and where the Wasserman was positive, mixed treatment was instituted. This was continued at the prophylactic station with the addition of salvarsan.

It is of especial interest to compare the course while under treatment of operative and nonoperative cases. Those laparotomized cleared up in a very short while, felt better, while the mental effect of having had the diseased portions removed led many of them to express the desire that they wished to leave the district and engage in an honorable calling. In the cases not operated, the source of infection remained; reinfection was continually taking place and very few were permanently benefited by local treatment.

PALO SECO LEPER COLONY.

In June mosquitoes and midges became very numerous; a gang of men cleared the brush from about the buildings and the insects disappeared. Two cases of malaria were noted, both mild. During the Spanish influenza outbreak 7 patients and 4 employees had mild attacks, but soon responded to treatment.

During the year there were 21 admissions, 4 discharges (2 by escape), 8 deaths, with 76 patients remaining in the asylum on December 31.

At the close of the year 72, or 94⅔ per cent, of the patients were taking the chaulmoogra oil treatment with marked alleviation of symptoms in many cases.

PANAMA HEALTH OFFICE.

Malaria.—The following table shows the cases of malaria chargeable to the city of Panama in the years 1914 to 1918, inclusive:

1914	2,154
1915	614
1916	235
1917	187
1918	97

The table only proves that malaria is a matter of more or less easy control, being simply a question of constant and continuous work. There has been continuous endeavor to improve the drainage conditions, eliminating all unnecessary drains, many of which have been filled and others straightened out. This has been done with no additional expense as to labor and with a very marked saving in expense in the consumption of oil.

A survey has been made recently of all ditches in what might be termed the Panama District and it totals 58,000 linear yards; this was done to correct former errors and to arrive at the exact yardage.

The serious problem confronting this office now as regards malaria is the condition of that portion of the environs of the city of Panama known as "Las Sabanas." Cases of malaria keep coming from this district and will continue to do so, so long as that section is not properly sanitated. It seems a useless expense to clean up a small section of it, and steps should be taken to have a proper sanitary survey made of this entire section, to be followed by complete sanitation.

Tuberculosis.—It is interesting to note from the following table the probable effect of the work directed from this office, regarding housing conditions in the city of Panama so far as they relate to the marked decreased mortality percentage.

Death rate from tuberculosis.

1916	5.15
1917	5.22
1918	4.14

No census was taken in 1918, and it is possible that a decrease in the population may be partly responsible for the lower number of deaths. This will be ascertained when a new census is made of the population.

There is now in contemplation another radical measure in regard to housing which it is believed will have a marked effect upon not only the death rate from tuberculosis, but upon health conditions generally in the city of Panama, and that is that each human being is entitled to at least 300 cubic feet of air space, and it is proposed to have each door opening into every room in each tenement house in this city lettered with the cubical contents thereof and confine the occupancy of each room to the required space; this can be done under the existing regulations and would have been done long ago had we had a building inspector attached to this office.

Possibly, under this heading might be shown the large decrease under the head of infant mortality. The following table for the past four years will show the practically stationary condition from 1914 to 1917, inclusive, and the marked decrease for the year 1918:

Rate per thousand infant mortality.

1914	272
1915	221
1916	236.86
1917	237.73
1918	188.27

This mortality rate, together with that from tuberculosis, could be largely decreased if the absolutely indigent members of the population were furnished with sufficient and nutriticus food.

Soup kitchens established in two or possibly three sections of the city would be of great benefit, provided some scheme could be arranged so that the food did not go into unworthy hands: however, this is a matter of detail and can and should be worked out. Meat is cheap and beans are cheap, and the combination would go far toward alleviating the present conditions, provided the funds could be found.

Smallpox.—The first case of smallpox was reported on July 10; all told to December 31 there were 102 cases. It developed, however, upon investigation that there had been 2 previous cases in the city, 1 on June 6 and 1 on June 24.

It is to be expected that individual cases will appear from time to time for months to come, as the native population will hide out children, in many instances grown people, to keep them from being vaccinated; as new cases are reported the original procedure is adhered to, disinfecting the premises and vaccinating all persons within one city square from point of infection, that is those who have not been previously and successfully recently vaccinated Under the direction of this office there have been done from July 10 to December 31, 61,621 vaccinations.

Regulation of midwives.—All midwives were reexamined in the month of December and 13 were refused licenses; as time goes on, probably 50 per cent of the present number of midwives should be refused licenses. It is difficult to take away their sole means of livelihood, especially some of them who are well advanced in age.

Dogs.—During the last few months of the year, 708 dogs were impounded and killed and the effects can be seen now upon the city streets, as but few dogs are abroad. The work is being kept up, nominally by the Alcalde, but actually by this office.

Schools.—Just as soon as the present building inspector can get to the matter, all schools within this city will be surveyed and many of them closed on account of overcrowding.

Stables.—The old question of stables in connection with fly-breeding has come up many times since the first of May and it was my earlier intention to have all stables with the exception of those of the Republic of Panama and the Panama Railroad closed, but when the owners showed their books and the large sums of money expended on buildings and yards under the direction and with the approval of a previous health officer, it did not look reasonable, but it was reasonable that they should all be required to be kept clean and we are having but little trouble now from fly-breeding as a result of filthy conditions, and it is hoped by the beginning of next rainy season there will be no fly-breeding places in the city, and by that time, sufficient fines will have been imposed to force owners, not only of stables but of hotels, restaurants, clubs, stores, etc., to recognize the fact that cleanliness is cheaper than dirt.

Manure.—All manure from the stables within the city is now being disposed of at Peña Prieta—filling in; this, while done without cost to this office, is a great waste of valuable material and some system should be devised whereby this very necessary fertilizer could be disposed of to the gardens around the city.

Examination of food handlers.—Three hundred and eighty-five butchers, cooks, waiters, and food handlers, barbers, and cigarmakers, were examined, 348 of whom were given a license to continue their work and 37 ordered to Santo Tomas Hospital for treatment.

Street cleaning.—This work has been well and efficiently done by the inspector in charge and by the men under him and it has been done in the most creditable manner, as the general condition of the streets of the city of Panama will compare favorably with that of any city of similar size anywhere.

Garbage collection and disposal.—The current year has seen the change from horse to motor conveyance of garbage at a very marked reduction in cost and increased efficiency.

Up to the 1st of December, with the exception of the period of repair at the Gavilan Island incinerator, all garbage was consumed at the incinerator. From December 1 to December 20, what might be called the Philippine method was tried out here with very marked success, both as to expediency and as to cost. This method consists of filling in low land where drainage ditches are maintained and where the cost of maintenance of these ditches would have been saved as the work progressed from month to month. The 20 days' trial of this method shows an actual cost per ton of 28.77 cents. This is the actual cost of labor and disinfectant with no overhead charges added, as the overhead after one month's trial would be practically nil as there would be no necessity for additional supervision, the foreman being amply competent to direct the work with only an occasional visit of either the health officer or one of his inspectors. The cost *per*

diem amounted to $16.40 and there was an average of 57 tons buried each day. On the 20th of December this office was directed by the Acting Governor to discontinue this method for the reason that the incinerator was built to be used and should be utilized for that purpose. Also on December 1 the management of the incinerator plant was removed from the direction of this office, under orders from the Governor's Office.

Venereal prophylaxis.—Under Decree No. 12 of the Municipality of Panama, issued on June 28, 1918, this office assumed direction of the venereal prophylaxis problem, establishing a prophylactic station on Twentieth Street and attempting to confine all prostitutes and clandestines within a given area. During the period from July 15 to November 5 there were examined at the prophylactic station 4,319 men, of which number 4,192 returned to the station for prophylactic treatment. During the same period there were registered at Santo Tomas Hospital 539 women. The following statistics on examination and treatment of prostitutes at Santo Tomás Hospital, are given:

Number of examinations, July 15 to December 31	2,694
Number of salvarsan treatments, July 15 to December 31	568
Number of mercurial injections, July 15 to December 31	178
Number of Wassermans taken, July 15 to December 31	959
Number of smears taken, July 15 to December 31	5,514
Number of admissions to hospital, July 15 to December 31	994

Of the 994 treated in the hospital, 152 were treated for syphilis and 916 for gonorrhea, 74 having been treated for both diseases.

There were reported by physicians in the city of Panama 82 cases of gonococcus infection and 25 cases of syphilis.

Colon Health Office.

General permanent improvements.—Many permanent improvements which will facilitate sanitation have been made during the year, such as the extensive hydraulic filling of the large swamps along the north side of the Fort Randolph road on which are located the Coco Solo Submarine Base and Aviation Field, and France Field; the filling and grading of the ground between Colon Hospital and the Radio Station, and the filling of the swampy area south of Fifteenth Street near Boca Grande, and the erection of a modern abattoir on same by the municipality of Colon. The large swamp north of Ninth Street and between New Cristobal and G Street is being filled at present. This will eliminate one of the largest culex breeding areas in the entire district.

The new cold storage plant at Mount Hope is almost completed. When this plant is in operation the old dilapidated rodent-infested plant now being used at Cristobal will be abandoned and old Dock No. 11 will be demolished. Old Dock 3, another rodent stronghold, is being demolished at present.

A new set of silver quarters are being erected near the quartermaster's corral on the Mount Hope road. Several large apartment houses have been erected in Colon during the year. These and the new silver quarters being erected at Mount Hope will somewhat relieve the congested conditions in Colon.

Malaria.—The malaria incidence in this district has been lower than ever before. Many times there were no cases recorded on th

weekly reports. The number of cases among employees reported for the entire year was 52. The extensive antimalarial work in and around Mount Hope and the filling of swamps near Coco Solo from which flights of mosquitoes had been coming into Colon every year, have contributed materially to the exceptionally low malarial rate. However, the outlying districts, such as Coco Solo, France Field, and Fort Sherman have suffered more from malaria than in recent years. The number of mosquitoes caught during the year was 19,043, of which 17,712 were culex.

Tuberculosis.—The number of cases of tuberculosis reported during the calendar year was 116. The congested condition of tenement houses, the discharge of uncured cases from the hospitals for lack of room and the economic status of the population in general in Colon make it a very difficult problem to deal with. The erection of a sanitarium for the isolation of all cases of tuberculosis is an urgent need and would go far in solving the problem.

Other communicable diseases reported were: Diphtheria, 8; chicken-pox, 21; pneumonia, 17; typhoid, 5; measles, 142; mumps, 9; whooping cough, 28; meningitis, 2; malaria, 41; opthalmia, 4; tetanus, 1: smallpox, 6; tuberculosis, 116.

Smallpox.—Five cases of smallpox were reported from December 1 to 31. All were in same locality and all from same focus. Twenty-three thousand people in Colon have been vaccinated during the past 3 months.

There has been no epidemic of any sort during the year. The smallpox cases originated in Panama City and as nearly every person in Colon had previously been vaccinated, there was no chance for it to become epidemic.

The typhoid cases were probably due to eating shell fish or from obscure carriers.

Street cleaning.—This work has been carried on as usual under the supervision of a sanitary inspector. Rubbish cans were placed on the principal streets during the year. This was considered a necessary sanitary improvement and the expense was covered in accordance with Article No. 7, Sanitary Regulations.

Dogs.—The number of stray and diseased dogs in Colon has been greatly reduced during the year. There were 350 dogs humanely killed by this department during the year.

Abattoir.—The antemortem, post-mortem, and quarantine inspection of animals arriving at this port and slaughtered at the abattoir has been carried on in the usual thorough manner.

Several cases of anthrax were found during the year at the abattoir, but with the present efficient force in charge of the post-mortem work, it is impossible for any anthrax-infected meat to escape their notice. Splenic smears are taken as a routine from every cow slaughtered at the abattoir and examined immediately.

Garbage disposal.—The collection and disposal of garbage has been kept up on the same lines as in previous years. Salvaging on a small scale has been attempted during the year. Grease has been salvaged by Kirkpatrick's soap factory, and rags, jute, rubber, etc., were collected by the Supply Department, and owing to shortage of potash, we have been selling ashes from the dump to the different soap manufacturers in Colon.

Venereal prophylaxis in Colon.—For the past six months the Health Department has been waging a campaign for the prevention and proper treatment of venereal diseases in Colon.

On the first examination of the prostitutes, 90 per cent of them were found with venereal infections. The last examination shows that only 2 per cent are infected at present. Two officers and eight enlisted men from the Medical Corps were placed in charge of the venereal clinic and its operations. Over one hundred doses of asphinemine were given in the clinic. Minor operations and treatment of chronic cases were also done in the clinic.

The segregated district was reduced from six square blocks to one, and a policeman was placed at each corner of said block night and day and no one could enter the district without a pass issued by the medical officer. In order to secure said pass the applicant would have to submit to an examination for the purpose of disclosing the presence or absence of venereal infections. If found infected he was given one treatment for same and instructed to report to some private physician for treatment.

The campaign in Colon has been satisfactory, and much good has been accomplished. Colon was made unprofitable for a prostitute to ply her trade in and as a result many left the country. Clandestine prostitution was reduced markedly.

Remarks.—The general sanitary conditions in the entire district are far better than ever before and with the completion of the many permanent improvements now under way, the operations of this department for the coming year will be greatly facilitated.

QUARANTINE.

The problem of protecting the Canal from imported disease remains practically the same as the preceding years for two major diseases, viz, bubonic plague and yellow fever. In addition the exclusion of cerebrospinal meningitis and influenza have required an enlargement of ordinary quarantine activities.

Plague has been reported or is suspected to exist along practically the entire west coast of South America, except the southern part of Chile. It has during the year extended along the coast northward at places, spreading into the interior and no adequate measures are being taken in the affected or threatened districts.

Certain Ecuadorean ports are frequently omitted as ports of call for larger vessels on account of unsatisfactory sanitary conditions, but there is a considerable trade from these ports carried in small schooners which must be fumigated and in some cases detained. Plague continues in Guayaquil, the mortality being high. It is possible milder cases are not reported. On the Atlantic side, plague has been present at ports of Brazil and Argentina and at Charallave, in the interior of Venezuela. It is believed cases may have occurred at Caracas.

Vessels from Chilean and Peruvian ports are inspected by an officer of the U. S. Public Health Service on duty in the office of the Consul General at Callao. Passengers from plague ports are at present detained to complete a period of seven days from date of

sailing and fumigation. However, as plague is now known to be a rat-borne disease in which the human element is negligible, it is probable that the regulations will be modified in the future so as to concentrate all efforts to exclude plague on vessels and rats carried by them. No cases of plague have been brought to the Isthmus during the year.

Yellow fever is endemic along the coast of Colombia and Ecuador with outbreaks in epidemic form from time to time. Although the disease has not been reported in Colombia during the year, all precautions taken during the epidemic of last year have been continued as a measure of safety. Vessels are fumigated at Buenaventura by an accredited officer in the Canal service and passengers from all yellow fever suspected ports are detained to cover the incubation period of six days from last possible exposure. At Guayaquil there is also an inspector of the U. S. Public Health Service who inspects all passengers destined for the Isthmus and fumigates the vessel for both rats and mosquitoes.

Yellow fever has made its appearance in Central American ports in epidemic form for the first time in several years. It was particularly prevalent in the Guatemalan ports of San Jose de Guatemala and Champerico and in the inland towns of Retalhahue and Escuintla, which are important railroad junctions as well as in the towns on the Guatemala-Mexico border. Fortunately the danger of bringing yellow fever from the Pacific ports to the north is less than that from Ecuador or Colombia, as absence of good harbors and wharves force steamers to lie well beyond the range of flight of the *Aedes calopus*. The single exception is Corinto, Nicaragua, but here vessels are allowed to use the wharf only in daytime and other precautions are taken under the supervision of the U. S. Vice-Consul.

Small sailing craft from any suspected ports are fumigated on arrival and the personnel held in quarantine.

On the Atlantic side yellow fever has been present at Brazilian ports and all Mexican, Central American, Colombian, and Venezuelan ports must be viewed with suspicion especially in the absence of reliable reports.

The steamer *Jamaica* arrived at Balboa on October 23 from Guayaquil having had one death at sea diagnosed as liver abscess. The history pointed to yellow fever contracted at Guayaquil and all precautions were taken, including refumigation of the vessel.

Smallpox has been present in the islands of San Andres and Old Providence, Colombia, and there have been some cases along the Atlantic coast of that country; it was reported as epidemic in Buenaventura. All persons coming to the Canal from Colombia are vaccinated but small trading boats do not pass quarantine and are probably responsible for the small epidemic of that disease that has occurred in the Republic of Panama.

Owing to the prevalence of influenza in both North and South American ports a strict quarantine against this disease was instituted in October. Since then the disease has not spread to any extent on the Canal Zone although cases have arrived at quarantine. On three vessels so many members of the crew were sick that they could not proceed until partial new crews were shipped.

One of the largest quarantine procedures ever attempted upon the Isthmus was the handling of the epidemic of cerebrospinal menin-

gitis upon the Japanese steamer *Anyo Maru*, which was turned back from Callao. This ship was received at Balboa, May 28, with a passenger list of 585 and a crew list of 234, having had in all 28 cases of meningitis, with 11 deaths. The entire passenger list, together with all known or suspected contacts among the crew, were immediately disembarked and removed to the Balboa Quarantine Station. The ship was thoroughly fumigated, steerage and crews' quarters washed down with live steam, followed by bichloride, and allowed to proceed after cultures from all members of crew were reported negative.

Space at the quarantine station not being sufficient, the adjacent Yacht Club, the Mañana Club, and the Chinese detention barracks were used. A small hospital for the care of the active cases was established.

The temperatures of all patients were taken twice daily, and all throats were sprayed morning and evening with a 5 per cent solution of dichloramine-T. From 150 to 200 cultures were taken daily, thus insuring that each patient had at least one culture every three days. As soon as a positive culture was obtained the patient was at once isolated in tents and maintained there until three negative cultures were obtained, or developed active meningitis, in which case he would be transferred to the hospital. Happily no cases developed during the entire time of quarantine. Patients isolated with positive cultures were cultured daily, and given a spray every three hours.

The sanitary situation was handled by a gang of 24 Japanese laborers. This gang attended to the grounds and the cleaning of the building. They were recruited from among the steerage passengers.

A small dispensary was established to attend the minor complaints of the passengers. This was opened one hour daily and had an average of 80 patients daily.

The difficulty of the situation was enhanced by the fact that over 95 per cent of the patients were Asiatics, and there was a lack of interpreters. A strict isolation was maintained from the beginning, insuring against the spread of the disease outside of the quarantine grounds.

With the exception of the cases of smallpox already mentioned in this report, no maritime quarantinable disease arrived at Zone ports or occurred on the Isthmus during the year.

CONCLUSION.

The Health Department of The Panama Canal is a model of its kind, entirely devoid of politics. One hundred per cent of the time of all of its employees is given to health work. As a result the Canal Zone is probably the healthiest section of the world to-day. In the cities of Panama and Colon, violations of the sanitary regulations are punished by a fine or imprisonment by the health officer. The certainty of punishment makes resort to this power rarely necessary. It seems a pity that the great lesson of the sanitation of the Canal can not be carried to every home in America that the favorable results secured in this pesthole might be obtained at the very much smaller purchase price it would cost in our more favored climate.

ADMISSION RATE PER 1,000 EMPLOYEES.

ALL CAUSES.

Year.	Average Employees.	Rate.
1906	26547	1779
1907	39238	1419
1908	43890	1132
1909	47167	887
1910	50902	905
1911	48876	896
1912	50893	727
1913	56654	519
1914	44329	420
1915	43785	320
1916	33176	283
1917	32589	357
1918	25520	406

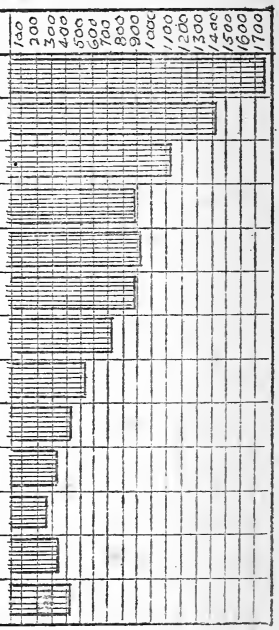

CHART I.

DEATH RATE PER 1,000 EMPLOYEES.

ALL CAUSES.

Year.	Average Employees.	Rate.
1906	26547	41.73
1907	39238	28.74
1908	43890	13.01
1909	47167	10.64
1910	50802	10.98
1911	48876	11.02
1912	50893	9.18
1913	56654	8.35
1914	44329	7.04
1915	34785	5.77
1916	33176	6.03
1917	32589	7.09
1918	25520	8.11

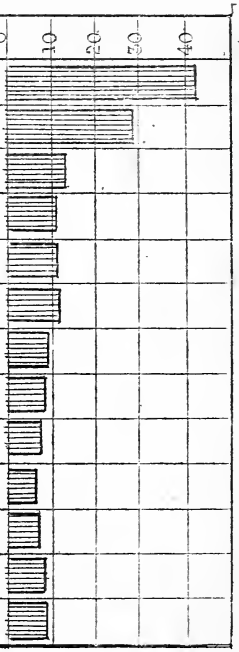

CHART 3.

NONEFFECTIVE RATE PER 1,000 EMPLOYEES.

Year	Average Employees.	Rate.
1906	26547	28.48
1907	39238	25.09
1908	43890	22.31
1909	47167	21.93
1910	50802	24.37
1911	48876	24.46
1912	50893	21.11
1913	56654	15.97
1914	44329	12.22
1915	34785	10.28
1916	33176	9.20
1917	32589	9.65
1918	25520	11.19

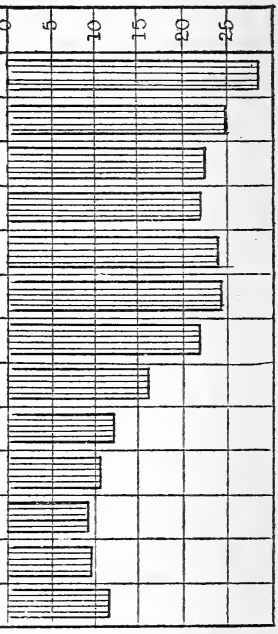

CHART 3.

MALARIAL FEVER

ADMISSION RATE PER 1,000 EMPLOYEES.

Year.	Admission Employees.	Rate.
1904	6213	125
1905	16511	514
1906	26547	821
1907	39238	424
1908	43890	282
1909	47167	215
1910	50802	187
1911	48876	184
1912	50893	110
1913	56654	76
1914	44329	82
1915	34785	51
1916	33176	16
1917	32589	14
1918	25520	18

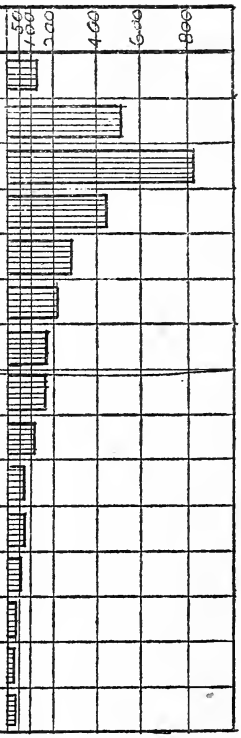

CHART 4

MALARIAL FEVER.

DEATH RATE PER 1,000 EMPLOYEES.

Year.	Average Employees.	Rate.
1904	6213	2.66
1905	16511	5.57
1906	26547	7.45
1907	39238	3.51
1908	43890	1.37
1909	47167	.85
1910	50802	.81
1911	48873	.64
1912	50893	.31
1913	56654	.30
1914	44329	.14
1915	34765	.23
1916	38176	.06
1917	32589	.09
1918	25520	.08

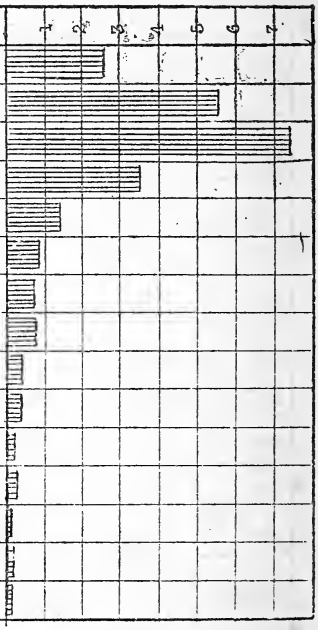

CHART 5

MALARIAL FEVER.

DEATH RATE PER 1,000 POPULATION IN THE CANAL ZONE AND THE CITIES OF PANAMA AND COLON.

EMPLOYEES AND NONEMPLOYEES.

Year.	Population.	Rate.
1906	73264	8.49
1907	102133	5.57
1908	120097	3.36
1909	135180	2.07
1910	151691	1.89
1911	156938	1.82
1912	146510	1.64
1913	129104	1.32
1914	123592	1.27
1915	121650	.51
1916	116918	.21
1917	114003	.18
1918	109737	.11

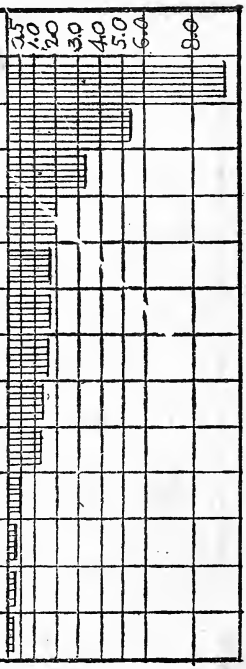

CHART 6

TABLE I.—DISCHARGES, DEATHS, AND NONEFFECTIVE RATES FOR EMPLOYEES.

ABSOLUTE NUMBERS.

	Number of employees.	Discharges and deaths from hospitals.			Deaths.			Noneffective from sickness.	
		Total.	Disease.	External causes.	Total.	Disease.	External causes.	Days treated.	Constantly noneffective.
Year, 1918:									
White	4,408	1,216	1,049	167	17	16	1	26,821	74.50
Colored	21,112	2,948	2,437	511	190	166	24	75,784	210.51
Total	25,520	4,164	3,486	678	207	182	25	102,605	285.01
Year, 1917:									
White	4,814	1,551	1,348	203	32	22	10	31,132	85.29
Colored	27,775	3,691	2,719	972	199	165	34	83,648	229.17
Total	32,589	5,242	4,067	117,5	231	187	44	114,780	314.46

PROPORTIONATE NUMBERS.[1]

Year, 1918:									
White	4,408	275.86	237.98	37.88	3.86	3.63	0.23	.....	16.88
Colored	21,112	139.64	115.43	24.21	9.00	7.86	1.14	.....	10.00
Total	25,520	163.17	136.60	26.57	8.11	7.13	.98	.....	11.19
Year, 1917:									
White	4,814	322.18	280.02	42.17	6.65	4.57	2.08	.....	17.92
Colored	27,775	132.89	97.89	35.00	7.16	5.94	1.22	.....	8.25
Total	32,589	160.85	124.80	36.05	7.09	5.74	1.35	.....	9.65

[1] Annual average per 1,000 employees.

TABLE II.—CAUSES OF DEATHS OF EMPLOYEES ARRANGED WITH REF-

Causes of death.	Color.		Age in years.				
	W.	B.	15–20	21–25	26–30	31–35	36–40
Abscess of liver	....	1	....	....	1	....	....
Apoplexy	1	5	....	....	....	....	1
Arteriosclerosis	....	1	....	....	....	....	....
Aneurysm	....	3	....	....	....	1	....
Ankylostomiasis	....	1	....	1	....	....	....
Cancer	1	5	....	1	....	....	2
Circulatory system, other diseases	....	2	....	....	....	1	....
Diabetes	1	1	....	....	....	....	....
Dysentery	....	1	....	....	....	....	....
Endocarditis	....	1	....	....	1	....	....
Gangrene, testicle and cord	....	1	....	....	....	....	1
Gastritis, acute	....	1	....	....	....	1	....
Heart, organic disease	3	13	....	1	1	3	2
Intestinal obstruction	....	2	....	....	....	1	....
Influenza	....	1	....	....	....	....	1
Intestines, other diseases of	....	1	....	....	1	....	....
Ill-defined	....	1	....	....	....	....	....
Leuchaemia	....	1	....	....	1	....	....
Liver, cirrhosis of	....	4	....	....	....	....	1
Malaria	....	2	....	....	....	1	1
Meningitis, simple	1	5	....	1	2	....	....
Meningitis, pneumococcus	1	2	2	....	1	....	....
Meningitis, cerebro-spinal	....	1	....	....	....	....	1
Nephritis, acute	....	4	....	2	....	1	....
Nephritis, chronic	1	14	....	....	3	2	5
Pneumonia, broncho	1	4	....	1	1	1	1
Pneumonia, lobar	....	28	2	4	9	2	5
Pott's disease	....	1	....	....	....	....	....
Pyemia	....	1	....	....	....	....	....
Pulmonary edema	....	1	....	....	....	1	....
Pachymeningitis syphilitic	....	1	....	....	....	....	1
Pyelitis	....	1	....	....	....	....	1
Peritonitis	....	1	....	....	....	....	1
Paralysis, general	1	....	....	....	....	....	....
Pulmonary congestion	1	....	....	....	....	....	....
Riggs disease	....	1	....	....	....	....	1
Septicemia	1	4	1	1	....	....	1
Syphilis	....	3	....	....	....	....	2
Stomach, ulcer of	....	1	....	....	....	....	....
Tuberculosis, pulmonary	3	41	2	10	16	5	6
Tuberculosis, diseminated	....	2	....	....	....	1	1
Tetanus	....	1	....	....	....	....	1
Undetermined	....	1	1	....	....	....	....
External causes.							
Drowning, accidental	1	4	1	....	....	2	2
Traumatism, dynamite	....	1	....	....	....	....	....
Traumatism by crushing	....	5	....	1	2	1	....
Traumatism by fall	....	1	....	1	....	....	....
Traumatism, railroad	....	4	1	....	2	1	....
Poisoning, other acute	....	1	....	....	1	....	....
Suicide, poisoning	....	1	....	....	1	....	....
Suicides, other	....	1	....	....	....	1	....
Other external violence	....	6	1	....	3	1	1
Total	17	190	11	24	46	27	39

ERENCE TO COLOR, AGE AND LENGTH OF RESIDENCE ON ISTHMUS.

Age in years—Con.						Length of residence on Isthmus (in years).														
41–45	46–50	51–55	56–65	66–80	Unknown	Under 1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–10	10–12	12–15	Over 15	Life	Unknown	Total.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
...	3	...	1	...	1	...	...	...	...	...	...	...	...	...	1	3	...	...	2	6
...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	1	1	...	...	...	3
...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
...	1	1	1	...	...	...	...	...	...	...	...	2	...	1	...	1	1	...	1	6
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
...	1	...	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
2	3	2	2	...	...	1	...	...	...	1	2	...	...	2	3	1	3	...	3	16
1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
...	2	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	2	...	4
1	1	1	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	2
...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	2	...	1	...	1	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
1	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...	1	4
2	3	...	...	...	...	...	...	...	...	...	1	...	...	3	5	2	...	...	4	15
...	...	...	...	...	1	1	...	...	...	...	...	...	1	2	...	1	...	...	...	5
2	1	...	2	...	1	...	...	...	1	5	1	...	2	3	5	3	1	4	3	28
1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
2	...	...	...	...	...	1	...	...	...	...	1	...	...	2	1	...	...	...	...	5
...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	3
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
...	2	3	...	...	...	3	1	2	...	3	5	3	3	6	7	5	...	1	5	44
...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	5	1	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	4	5
1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
1	...	...	...	...	...	...	...	...	...	2	...	1	1	1	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...	1	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
...	...	...	...	...	...	...	1	...	...	...	1	1	...	...	...	...	...	1	2	6
17	20	10	6	2	5	9	2	4	5	13	13	9	13	29	29	26	7	11	37	207

TABLE III.—DEATHS OF RESIDENTS OF THE CITIES OF PANAMA, COLON, AND THE CANAL ZONE.

Place.	Average population.	Deaths.			Annual rate per 1,000 population.		
		Total.	Disease.	External causes.	Total.	Disease.	External causes.
Year, 1918:							
Panama	61,369	1,314	1,284	30	21.41	20.92	0.49
Colon	26,078	616	587	29	23.62	22.51	1.11
Canal Zone	*22,290	236	216	20	10.59	9.69	.90
Total	109,737	2,166	2,087	79	19.74	19.02	.72
Year, 1917:							
Panama	61,074	1,714	1,661	53	28.06	27.19	.87
Colon	25,386	667	642	25	26.27	25.29	.98
Canal Zone	*27,543	313	273	40	11.36	9.91	1.45
Total	114,003	2,694	2,576	118	23.63	22.60	1.03

*Exclusive of military population.

TABLE IV.—DEATHS OF CIVIL POPULATION (EMPLOYEES PLACE OF

Cause of death.	Sex.		Color.			Age (in years).			
	M.	F.	W.	B.	Y.	Under 1 yr.	1-4	5-10	11-20
General diseases.									
Relapsing fever	....	1	....	1	....	.....	.....	.....	.....
Malaria	2	2	3	1	....	.....	2	.....	1
Malarial fever:									
Estivoautumnal	8	1	2	7	....	1	1	1	.....
Tertian	....	3	....	3	....	.....	3	.....	.....
Cachexia	1	1	....	2	....	1	.....	.....	.....
Measles	....	2	....	2	....	1	.....	1	.....
Whooping cough	1	1	....	2	....	1	1	.....	.....
Diphtheria and croup	1	5	....	6	....	2	3	.....	.....
Influenza	5	5	3	6	1	3	2	.....	.....
Dysentery	1	....	....	1	....	.....	.....	.....	.....
Dysentery:									
Entamebic	4	....	....	3	1	.....	.....	1	.....
Unclassified	1	1	....	2	....	1	.....	.....	.....
Leprosy	3	2	1	4	....	.....	.....	.....	.....
Purulent infection and septicemia	4	....	....	4	....	2	.....	.....	1
Pyemia	2	....	....	2	....	.....	.....	.....	.....
Septicemia	5	3	3	5	....	1	2	.....	.....
Pyemia and septicemia, pneumococcic	1	....	....	1	....	.....	.....	.....	.....
Tetanus	4	1	....	5	....	2	.....	.....	.....
Pellagra	....	10	....	10	....	.....	.....	.....	1
Beriberi	1	....	....	1	....	1	.....	.....	.....
Tuberculosis of the lungs	230	131	21	324	16	3	5	.....	27
Acute miliary tuberculosis	6	5	....	10	1	3	.....	.....	.....
Tuberculous meningitis	6	6	2	10	....	6	5	1	.....
Abdominal tuberculosis	4	....	1	3	....	2	.....	.....	1
Pott's disease	1	1	....	2	....	.....	.....	.....	1
Tuberculosis of other organs	1	2	....	3	....	1	1	.....	1
Disseminated tuberculosis	11	7	....	17	1	4	5	1	.....
Rickets	....	1	....	1	....	1	.....	.....	.....
Syphilis:									
Primary	4	2	2	4	....	2	.....	1	.....
Tertiary	7	1	1	6	1	.....	.....	.....	.....
Hereditary	1	3	1	3	....	4	.....	.....	.....
Period not stated	4	....	....	3	1	2	.....	1	.....
Gonococcus infection	1	1	....	2	....	.....	.....	.....	.....
Adenitis chancroided	....	1	....	1	....	.....	.....	.....	1
Cancer and other malignant tumors of the stomach and liver	4	6	....	10	....	.....	.....	.....	.....
Cancer and other malignant tumors of the peritoneum, intestines, rectum	.....	1	....	1	....	.....	1	.....	.....
Cancer and other malignant tumors of the female genital organs	.....	15	....	15	....	.....	.....	.....	.....
Cancer and other malignant tumors of the skin	....	1	....	1	....	.....	.....	.....	.....
Cancer and other malignant tumors of other organs and of organs not specified	9	6	....	15	....	.....	.....	1	.....
Other tumors (tumors of the female genital organs excepted)	1	....	1	....	....	.....	1	.....	.....
Chronic rheumatism and gout	1	....	....	1	....	.....	.....	.....	.....
Arthritis deformans	....	1	....	1	....	.....	.....	.....	.....
Scurvy	....	1	....	1	....	.....	1	.....	.....
Diabetes	2	3	2	3	....	.....	.....	.....	.....
Leukemia	1	1	....	2	....	1	.....	.....	1
Leukemia, lymphatic	1	....	....	1	....	.....	.....	.....	.....
Anemia, primary, pernicious	....	2	1	1	....	.....	.....	.....	.....
Anemia, secondary, cause not determined	1	....	....	1	....	.....	.....	.....	.....
Other general diseases	3	....	....	3	....	.....	.....	.....	.....

AND NONEMPLOYEES) BY CAUSE, SEX, COLOR, AGE AND RESIDENCE.

Age (in years)—Continued.							Place of residence.			
21–30	31–40	41–50	51–60	61–75	76–100	Age unknown.	Panama.	Colon.	Canal Zone.	Total.
	1						1			1
		1					4			4
2	2	1	1				7		2	9
							2	1		3
1							1		1	2
							2			2
							1		1	2
	1						4	1	1	6
1	1		2	1			7	1	2	10
1							1			1
	1	1		1			2	1	1	4
		1						1	1	2
2	1		1		1		3		2	5
1							2	1	1	4
1			1				2			2
1	2	1		1			4	2	2	8
		1					1			1
1	1	1					3	2		5
5	2	2					6	3	1	10
							1			1
149	98	47	19	13			223	104	34	361
1	2	5					8	3		11
							8	2	2	12
1							2	2		4
		1					1	1		2
							2	1		3
3	5						10	3	5	18
							1			1
3							5	1		6
2	3	1		2			2	2	4	8
							1	2	1	4
		1					2	2		4
1	1						1	1		2
							1			1
1	3	2	4				6	4		10
									1	1
	6	4	4	1			9	3	3	15
				1			1			1
2	2	3	5	1	1		10	4	1	15
							1			1
				1			1			1
1								1		1
							1			1
		2	1		1	1	3		2	5
							1	1		2
1									1	1
	1	1					1	1		2
	1						1			1
1	1			1			3			3

TABLE IV.—DEATHS OF CIVIL POPULATION (EMPLOYEES AND RESIDENCE—

Cause of death.	Sex.		Color.			Age (in years).			
	M.	F.	W.	B.	Y.	Under 1 yr.	1-4	5-10	11-20
General diseases.—Continued.									
Alcoholism (acute or chronic)	2	....	....	2	....	.....	.....	.....	.....
Alcoholism chronic	2	1	....	3	....	.....	1	.....	.....
Diseases of the nervous system and of the organs of special sense.									
Encephalitis	1	....	....	1	....	.....	.....	.....	.....
Simple meningitis	11	7	2	15	1	3	6	.....	1
Cerebro-spinal fever	5	2	1	6	....	1	1	3	.....
Pneumococcus meningitis	3	3	....	5	1	2	.....	.....	3
Other diseases of the spinal cord	2	....	....	2	....	.....	1	.....	.....
Cerebral hemorrhage, apoplexy	21	22	6	37	....	2	.....	.....	.....
Softening of the brain	3	....	....	3	....	.....	.....	.....	.....
Paralysis without specified cause	1	1	....	2	....	.....	.....	.....	.....
General paralysis of the insane	2	....	1	1	....	.....	.....	.....	.....
Other forms of mental alienation	....	2	....	2	....	.....	.....	.....	.....
Dementia precox	2	....	....	2	....	.....	.....	.....	.....
Epilepsy	1	1	....	2	....	1	.....	.....	.....
Convulsions (nonpuerperal) [5 years and over]	....	1	....	1	....	.....	.....	.....	1
Convulsions of infants [under 5 years of age]	2	3	....	4	1	4	1	.....	.....
Chorea	....	1	....	1	....	1	.....	.....	.....
Other diseases of the nervous system	1	....	....	1	....	.....	.....	.....	.....
Tumor of the brain	1	1	....	2	....	.....	.....	.....	.....
Diseases of the eyes and their annexa	....	1	....	1	....	1	.....	.....	.....
Diseases of the circulatory system.									
Pericarditis	3	2	....	5	....	.....	.....	.....	1
Acute endocarditis	12	8	2	18	....	3	3	2	.....
Malignant endocarditis	....	2	....	2	....	.....	.....	.....	1
Organic disease of the heart	78	39	12	100	5	1	1	1	2
Angina pectoris	2	4	1	5	....	.....	.....	.....	.....
Diseases of the arteries, atheroma, aneurysm, etc	3	....	1	2	....	.....	.....	.....	.....
Aneurysm	5	2	2	5	....	.....	.....	.....	.....
Arteriosclerosis	14	11	3	22	....	.....	.....	.....	.....
Embolism and thrombosis	2	1	....	3	....	.....	.....	.....	.....
Diseases of the lymphatic system (lymphangitis, etc)	1	2	....	2	1	1	2	.....	.....
Hemorrhage; other diseases of the circulatory system	4	4	1	7	....	1	.....	.....	.....
Diseases of the respiratory system.									
Acute bronchitis	36	30	1	63	2	48	15	2	.....
Chronic bronchitis	9	15	....	21	3	13	6	.....	.....
Broncho-pneumonia	78	60	9	127	2	67	36	4	6
Pneumonia, unqualified	9	16	5	18	2	5	3	2	2

NONEMPLOYEES), BY CAUSE, SEX, COLOR, AGE, AND PLACE OF
Continued.

Age (in years)—Continued.							Place of residence.			
21–30	31–40	41–50	51–60	61–75	76–100	Age unknown	Panama.	Colon.	Canal Zone.	Total
.....	.....	2	.....	.....	.....	.....	1	1	.....	2
.....	1	1	.....	.....	.....	.....	1	2	.....	3
.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
3	3	1	1	.....	.....	.....	12	6	.....	18
.....	2	.....	.....	.....	.....	.....	6	1	.....	7
.....	.....	1	.....	.....	.....	.....	4	1	1	6
1	.....	.....	.....	.....	.....	.....	2	.....	.....	2
5	9	10	7	8	1	1	27	10	6	43
.....	2	.....	.....	1	.....	.....	2	1	.....	3
.....	.....	1	.....	.....	1	.....	2	.....	.....	2
1	.....	1	.....	.....	.....	.....	.....	.....	2	2
1	.....	.....	.....	.....	1	.....	2	.....	.....	2
1	1	.....	.....	.....	.....	.....	2	.....	.....	2
.....	.....	1	.....	.....	.....	.....	1	1	.....	2
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	3	1	1	5
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
1	.....	.....	1	.....	.....	.....	2	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
1	1	1	.....	.....	.....	1	4	1	.....	5
3	4	3	2	.....	.....	.....	17	2	1	20
.....	1	.....	.....	.....	.....	.....	2	.....	.....	2
17	30	28	17	16	4	.....	63	41	13	117
2	1	1	1	.....	1	.....	4	2	.....	6
.....	.....	3	.....	.....	.....	.....	.....	3	.....	3
.....	4	2	.....	.....	.....	1	1	6	.....	7
.....	1	6	7	8	3	.....	14	5	6	25
.....	1	1	1	.....	.....	.....	3	.....	.....	3
.....	.....	.....	.....	.....	.....	.....	2	1	.....	3
2	3	1	1	.....	.....	.....	6	1	1	8
1	.....	.....	.....	.....	.....	.....	34	32	.....	66
.....	1	2	1	1	.....	.....	4	19	1	24
6	9	3	1	5	1	.....	86	41	11	138
5	6	1	.....	1	.....	.....	17	5	3	25

TABLE IV.—DEATHS OF CIVIL POPULATION (EMPLOYEES AND RESIDENCE—

Cause of death.	Sex.		Color.			Age (in years).			
	M.	F.	W.	B.	Y.	Under 1 yr.	1–4	5–10	11–20
Diseases of the respiratory system. Continued.									
Lobar pneumonia	70	33	6	97	....	8	8	1	5
Pleurisy	4	....	....	4	....	....	....	....	....
Empyema	3	....	1	2	....	....	....	1	....
Pulmonary congestion, pulmonary apoplexy	3	4	1	6	....	1	....	....	....
Gangrene of the lungs	2	1	....	2	1	....	....	....	....
Asthma	1	3	....	4	....	....	2	....	....
Pulmonary emphysema	....	3	1	2	....	....	....	....	....
Other diseases of the respiratory system (tuberculosis excepted)	3	1	1	3	....	1	1	....	....
Abscess of lungs	1	....	1	....	....	....	....	....	....
Diseases of the digestive system.									
Diseases of the mouth and annexa	1	....	....	1	....	....	....	....	....
Diseases of the pharynx	1	....	....	1	....	1	....	....	....
Stricture of the esophagus	1	....	....	1	....	....	1	....	....
Ulcer of the stomach	2	2	1	3	....	....	....	....	1
Other diseases of the stomach (cancer excepted)	4	1	....	5	....	2	....	....	....
Acute gastritis	5	6	5	6	....	8	1	....	....
Acute indigestion	4	4	1	7	....	7	1	....	....
Diarrhea and enteritis (under 2 years)	97	90	19	167	1	145	42	....	....
Colitis	20	15	....	35	....	23	9	....	....
Diarrhea and enteritis (2 years and over)	7	5	2	10	....	....	4	3	....
Colitis	2	1	....	3	....	....	2	....	....
Ankylostomiasis	2	....	....	2	....	....	....	....	1
Appendicitis and typhlitis	1	....	1	....	....	....	....	....	1
Acute appendicitis	1	1	....	2	....	....	....	....	....
Chronic appendicitis	....	1	....	1	....	....	....	....	....
Hernia, intestinal obstructions	3	4	....	7	....	1	....	....	....
Intestinal obstructions	5	....	....	5	....	1	....	....	....
Other diseases of the intestines	1	....	....	1	....	....	....	....	....
Duodenal ulcer	1	....	....	1	....	....	....	....	....
Hydatid tumor of the liver	1	....	....	1	....	....	....	....	....
Cirrhosis of the liver	17	6	2	18	3	....	....	....	....
Other diseases of the liver	5	8	....	13	....	7	1	1	....
Abscess of liver (unqualified)	8	....	3	5	....	1	....	....	1
Cholecystitis	2	1	....	3	....	....	....	....	1
Simple peritonitis (nonpuerperal)	12	19	....	22	....	....	1	....	3
Other diseases of the digestive system (cancer and tuberculosis excepted)	....	1	....	1	....	....	....	....	....
Nonvenereal diseases of the genito-urinary system and annexa									
Acute nephritis	20	15	4	31	....	6	3	2	1
Bright's disease (chronic nephritis)	76	37	11	99	3	2	2	....	2
Other diseases of the kidney and annexa	4	2	1	5	....	1	....	....	....
Bilharziasis of urinary tract	....	1	....	1	....	....	1	....	....
Pyelo-nephrosis	4	1	....	5	....	2	1	....	....
Diseases of the bladder	1	....	1	....	....	....	....	....	....
Cystitis	1	1	1	1	....	....	....	....	....

NONEMPLOYEES), BY CAUSE, SEX, COLOR, AGE, AND PLACE OF
Continued.

Age (in years)—Continued.							Place of residence.			Total
21–30	31–40	41–50	51–60	61–75	75–100	Age unknown.	Panama.	Colon.	Canal Zone.	
37	23	9	5	1	.....	1	43	45	15	103
2	.....	2	.....	.....	.....	.....	3	.....	1	4
1	.....	1	.....	.....	.....	.....	3	.....	.....	3
.....	2	2	2	.....	.....	.....	5	1	1	7
1	1	1	.....	.....	.....	.....	2	1	.....	3
.....	.....	.....	.....	2	.....	.....	4	.....	.....	4
.....	2	1	.....	.....	.....	.....	2	1	.....	3
.....	1	1	.....	.....	.....	.....	4	.....	.....	4
.....	.....	.....	.....	1	.....	.....	1	.....	.....	1
.....	1	.....	.....	.....	.....	.....	.....	.....	1	1
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	.....	3	.....	.....	.....	.....	1	3	.....	4
2	1	.....	.....	.....	.....	.....	5	.....	.....	5
.....	1	1	.....	.....	.....	.....	10	.....	1	11
.....	.....	.....	.....	.....	.....	.....	.....	6	2	8
.....	.....	.....	.....	.....	.....	.....	128	47	12	187
1	.....	.....	1	.....	1	.....	28	4	3	35
2	1	1	1	.....	.....	.....	8	3	1	12
.....	.....	.....	.....	1	.....	.....	1	.....	2	3
1	.....	.....	.....	.....	.....	.....	.....	1	1	2
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
1	1	.....	.....	.....	.....	.....	1	1	.....	2
.....	.....	.....	.....	1	.....	.....	1	.....	.....	1
.....	1	1	3	1	.....	.....	5	2	.....	7
1	2	.....	1	.....	.....	.....	3	2	.....	5
1	.....	.....	.....	.....	.....	.....	.....	.....	1	1
.....	.....	.....	.....	1	.....	.....	.....	1	.....	1
.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
2	4	12	4	1	.....	.....	17	4	2	23
.....	3	1	.....	.....	.....	.....	11	2	.....	13
2	1	2	.....	1	.....	.....	6	1	1	8
1	.....	.....	1	.....	.....	.....	3	.....	.....	3
5	12	1	.....	.....	.....	.....	10	10	2	22
.....	.....	1	.....	.....	.....	.....	.....	1	.....	1
8	5	6	1	3	.....	.....	18	13	4	35
17	26	27	13	16	5	3	72	32	9	113
1	2	2	.....	.....	.....	.....	5	.....	1	6
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	.....	1	1	.....	.....	.....	2	1	2	5
.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
.....	1	1	.....	.....	.....	.....	2	.....	.....	2

TABLE IV.—DEATHS OF CIVIL POPULATION (EMPLOYEES AND RESIDENCE—

Cause of death	Sex.		Color			Age (in years).			
	M.	F.	W.	B.	Y.	Under 1 yr.	1–4	5–10	11–20
Nonvenereal diseases of the genito-urinary system and annexa—Continued.									
Hypertrophy of prostate	1	....	1	....	....	.....	.....	.....	.....
Uterine hemorrhage (nonpuerperal)	....	1	....	1	....	.....	.....	.....	.....
Uterine tumor (noncancerous)	....	1	....	1	....	.....	.....	.....	.....
Other diseases of the uterus	....	1	....	1	....	.....	.....	.....	.....
Nonpuerperal diseases of the breast (cancer excepted)	....	1	....	1	....	.....	.....	.....	.....
Benign tumor of breast	....	1	....	1	....	.....	.....	.....	.....
The puerperal state.									
Hyperemesis gravidarum	....	3	....	3	....	.....	.....	.....	1
Puerperal hemorrhage	....	5	....	6	....	.....	.....	.....	.....
Puerperal septicemia	....	8	1	7	....	.....	.....	.....	1
Puerperal albuminuria and convulsions	....	1	....	1	....	.....	.....	.....	1
Eclampsia	....	3	....	3	....	.....	.....	.....	.....
Puerperal insanity	....	1	1	....	....	.....	.....	.....	.....
Diseases of the skin and of the cellular tissue.									
Gangrene	3	....	....	3	....	.....	.....	.....	.....
Carbuncle	....	1	....	1	....	1	.....	.....	.....
Pemphigus contagiosus	....	1	....	1	....	1	.....	.....	.....
Diseases of the bones and of the organs of locomotion.									
Diseases of the bones (tuberculosis excepted)	1	....	....	1	....	.....	.....	.....	.....
Caries (nontuberculous)	....	1	....	1	....	.....	1	.....	.....
Arthritis	1	....	....	1	....	.....	.....	.....	.....
Malformations.									
Congenital malformations (stillbirth not included)	7	2	1	8	....	9	.....	.....	.....
Diseases of early infancy.									
Newborn child	3	2	....	5	....	5	.....	.....	.....
Congenital debility, icterus, and scleroma	7	9	1	15	....	16	.....	.....	.....
Premature birth	24	22	6	39	1	46	.....	.....	.....
Congenital debility	17	13	2	28	....	29	1	.....	.....
Atrophy of infants	....	1	....	1	....	1	.....	.....	.....
Malnutrition	46	37	....	83	....	70	12	.....	1
Other causes peculiar to early infancy (including various consequences of labor)	16	6	4	18	....	14	8	.....	.....
Old age.									
Senility	4	14	3	15	....	.....	.....	.....	.....

NONEMPLOYEES) BY CAUSE, SEX, COLOR, AGE, AND PLACE OF
Continued.

Age (in years)—Continued.							Place of residence.			
21–30	31–40	41–50	51–60	61–75	76–100	Age unknown	Panama.	Colon.	Canal Zone.	Total
.....	.....	.....	.....	1	.....	.....	1	.....	.....	1
1	.....	.....	.....	.....	.....	.....	1	.....	.....	1
1	.....	.....	.....	.....	.....	.....	.....	1	.....	1
1	.....	.....	.....	.....	.....	.....	.....	.....	1	1
.....	1	.....	.....	.....	.....	.....	.....	.....	1	1
1	.....	.....	.....	.....	.....	.....	1	.....	.....	1
2	.....	.....	.....	.....	.....	.....	2	1	.....	3
3	2	.....	.....	.....	.....	.....	3	1	1	5
4	2	1	.....	.....	.....	.....	5	2	1	8
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
3	.....	.....	.....	.....	.....	.....	2	.....	1	3
1	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	1	2	.....	.....	.....	.....	.....	2	1	3
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1
.....	1	.....	.....	.....	.....	.....	.....	.....	1	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
.....	1	.....	.....	.....	.....	.....	1	.....	.....	1
.....	.....	.....	.....	.....	.....	.....	7	2	.....	9
.....	.....	.....	.....	.....	.....	.....	4	.....	1	5
.....	.....	.....	.....	.....	.....	.....	11	4	1	16
.....	.....	.....	.....	.....	.....	.....	27	13	6	46
.....	.....	.....	.....	.....	.....	.....	21	7	2	30
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
.....	.....	.....	.....	.....	.....	.....	48	17	18	83
.....	.....	.....	.....	.....	.....	.....	14	8	.....	22
.....	.....	.....	1	4	13	.....	17	.....	1	18

TABLE IV.—DEATHS OF CIVIL POPULATION (EMPLOYEES AND RESIDENCE.

Cause of death.	Sex.		Color.			Age (in years).			
	M.	F.	W.	B.	Y.	Under 1 yr.	1–4	5–10	11–20
Affections produced by external causes.									
Suicide by poisoning	2	1	2	1	....	....	....	....	1
Suicide by hanging or strangulation	2	....	....	1	1	....	....	....	1
Suicide by firearms	2	....	1	1	....	....	....	....	....
Suicide by cutting or piercing instruments	1	....	....	1	....	....	....	....	....
Suicide by jumping from high place	1	....	....	1	....	....	....	....	....
Other suicides	1	....	....	1	....	....	....	....	....
Other acute poisonings	1	1	1	1	....	....	....	....	1
Conflagration	....	1	....	1	....	1	....	....	....
Burns (conflagration excepted)	....	2	1	1	....	1	1	....	....
Accidental drowning	8	1	2	7	....	....	1	....	1
Traumatism by firearms	3	....	....	3	....	....	....	....	1
Traumatism by cutting or piercing instruments	2	....	....	2	....	....	....	....	....
Traumatism by fall	9	1	1	9	....	....	3	....	....
Traumatism by machines	1	....	....	1	....	....	....	....	1
Traumatism by other crushings, (vehicles, railroads, landslides, etc.)	7	2	....	9	....	....	1	....	1
Railroad traumatism	4	1	....	5	....	....	....	1	1
Dynamite traumatism	1	....	....	1	....	....	....	....	....
Traumatism by landslides	1	....	....	1	....	....	....	....	....
Lightning	1	....	....	1	....	....	....	....	....
Homicide by firearms	5	....	1	4	....	....	....	....	2
Homicide by cutting or piercing instruments	1	2	....	3	....	....	....	....	1
Homicide by other means	....	1	....	1	....	....	....	....	....
Fractures (cause not specified)	3	2	1	3	1	....	1	....	1
Dislocations	2	....	....	2	....	....	....	....	1
Other external violence	5	1	....	6	....	1	....	....	....
Ill-defined diseases.									
Sudden death	....	1	....	....	1	....	....	....	....
Cause of death not specified or ill-defined	12	14	2	22	....	8	6	4	1
Infections of undetermined origin	2	1	....	3	....	1	1	....	....
No disease	1	....	....	1	....	....	....	....	1
Total	1263	903	186	1928	52	620	225	35	87
Stillbirths	142	133	33	238	4	....	....	....	....
Grand total	1405	1036	219	2166	56	620	225	35	87

NONEMPLOYEES), BY CAUSE, SEX, COLOR, AGE, AND PLACE OF —Continued.

Age (in years)—Continued.							Place of residence.			
21–30	31–40	41–50	51–60	61–75	76–100	Age unknown	Panama.	Colon.	Canal Zone.	Total.
.....	2	.....	.....	.....	.....	.....	1	.....	2	3
.....	1	.....	.....	.....	.....	.....	2	.....	.....	2
.....	1	1	.....	.....	.....	.....	2	.....	.....	2
1	.....	.....	.....	.....	.....	.....	.....	.....	1	1
.....	1	.....	.....	.....	.....	.....	.....	1	.....	1
.....	1	.....	.....	.....	.....	.....	.....	.....	1	1
1	.....	.....	.....	.....	.....	.....	1	1	.....	2
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
2	5	.....	.....	.....	.....	.....	1	.....	1	2
1	1	.....	.....	.....	.....	.....	1	4	4	9
.....	.....	.....	.....	.....	.....	.....	.....	3	.....	3
1	1	.....	.....	.....	.....	.....	1	.....	1	2
3	3	.....	1	.....	.....	.....	1	9	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
5	1	.....	.....	1	.....	.....	3	4	2	9
1	2	.....	.....	.....	.....	.....	1	1	3	5
.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
.....	.....	1	.....	.....	.....	.....	1	.....	.....	1
.....	1	.....	.....	.....	.....	.....	1	.....	.....	1
.....	2	1	.....	.....	.....	.....	5	.....	.....	5
1	1	.....	.....	.....	.....	.....	1	2	.....	3
.....	1	.....	.....	.....	.....	.....	.....	.....	1	1
1	1	.....	1	.....	.....	.....	4	1	.....	5
1	.....	.....	.....	.....	.....	.....	2	.....	.....	2
3	2	.....	.....	.....	.....	.....	1	2	3	6
.....	.....	.....	.....	.....	1	.....	1	.....	.....	1
2	2	1	2	.....	.....	.....	17	8	1	26
.....	1	.....	.....	.....	.....	.....	1	2	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
358	349	235	115	99	34	9	1314	616	236	2166
.....	.....	.....	.....	.....	.....	.....	164	66	45	275
358	349	235	115	99	34	9	1478	682	281	2441

TABLE IV-A.—DEATHS

Cause of death.	Sex.		Color.		Under 1 year.
	M.	F.	W.	B.	
Influenza	5	.....	4	1	.....
Chronic nephritis	7	4	2	9	.....
Other diseases of the kidney	1	.....	.....	1	.....
Stricture of the urethra	1	.....	1	.....	.....
Pulmonary tuberculosis	21	5	4	22	.....
Disseminated tuberculosis	2	1	1	2	.....
Cerebrospinal meningitis	.....	1	.....	1	.....
Tuberculous meningitis	1	.....	.....	1	.....
Arteriosclerosis	3	2	1	4	.....
Organic disease of the heart	14	4	3	15	.....
Diarrhea and enteritis	4	.....	.....	4	.....
Broncho-pneumonia	10	3	2	10	.....
Pneumonia, unqualified	3	.....	1	2	.....
Lobar pneumonia	22	3	11	14	1
Diseases of the spleen	1	1	.....	2	.....
Cancer of the female genital organs	.....	2	1	1	.....
Cancer of other organs	6	1	3	4	.....
Homicide by firearms	3	1	3	1	.....
Traumatism by fall	1	.....	.....	1	.....
Epilepsy	1	2	.....	3	.....
Colitis	1	.....	.....	1	.....
Peritonitis	1	1	1	1	.....
Locomotor ataxia	1	.....	1	.....	.....
General paralysis of the insane	1	.....	.....	1	.....
Pulmonary edema	1	.....	.....	1	1
Malaria fever	3	.....	2	1	.....
Intestinal obstruction	1	.....	1	.....	.....
Diseases of the respiratory system	1	.....	.....	1	.....
Fracture, cause not specified	1	.....	1	.....	.....
Malnutrition	.....	1	.....	1	1
Diseases of the intestines	1	.....	.....	1	.....
Phlegmon and cellulitis	1	.....	.....	1	.....
Syphilis, period not stated	3	.....	.....	3	.....
Dysentery	3	.....	1	2	.....
Purulent infection, septicemia	2	.....	.....	2	.....
Tetanus	1	.....	.....	1	.....
Aneurysm	1	.....	1	.....	.....
Acute bronchitis	.....	2	.....	2	1
Acute appendicitis	1	1	1	1	.....
Abscess of the liver	1	.....	.....	1	.....
Abscess of the liver (entameba)	1	.....	1	.....	.....
Cirrhosis of the liver	2	1	1	2	.....
Absorption of deleterious gases	1	.....	.....	1	.....
Premature birth	1	.....	.....	1	1
Erysipelas	.....	1	.....	1	1
Premature delivery	.....	1	.....	1	.....
Accidental drowning	7	.....	2	5	.....
Railroad traumatism	1	.....	1	.....	.....
Embolism and thrombosis	1	.....	.....	1	.....
Septicemia	1	.....	1	.....	.....
Empyema	1	.....	1	.....	.....
Leprosy	.....	1	.....	1	.....
Gangrene of the lungs	.....	1	.....	1	.....
Conflagration	1	.....	1	.....	.....
Convulsions	1	.....	.....	1	.....
Pericarditis	1	.....	.....	1	.....
Pyemia	1	.....	1	.....	.....
Typhoid fever	1	.....	1	.....	.....

[1] Includes deaths of all nonresidents, off incoming ships, etc.
Deaths of nonresidents are not taken up in the statistical charts relating to Panama, Colon,

OF NONRESIDENTS.[1]

Age (in years).									Total
1–4	5–10	11–20	21–30	31–40	41–50	51–60	61–75	+75	
			2		3				5
			1	4	4	2			11
						1			1
							1		1
			13	5	5	2	1		26
1		1	1						3
			1						1
1									1
	1						4		5
		1	2	3	7	3	2		18
1				2		1			4
2	2	2	6					1	13
			2	1					3
		2	13	5	2	2			25
				1	1				2
					1	1			2
				2	2	1	2		7
		1	2		1				4
			1						1
		1	2						3
					1				1
			2						2
						1			1
				1					1
									1
			3						3
					1				1
			1						1
					1				1
	1								1
			1						1
		1	1			1			3
					2		1		3
			1	1					2
						1			1
				1					1
1									2
			2						2
			1						1
				1					
				1	2				3
				1					1
									1
									1
			1						1
			3	2	1		1		7
			1						1
				1					1
			1						1
				1					1
		1							1
			1						1
			1						1
1									1
1									1
				1					1
			1						1

[1] and the Canal Zone.

TABLE IV-A.—DEATHS

Cause of death.	Sex.		Color.		Under 1 year.
	M.	F.	W.	B.	
Ill-defined or not determined	2	.....	2	.....	.....
Apoplexy	.....	1	.....	1	.....
Gangrene	1	.....	.....	1	.....
Traumatism by firearms	1	.....	.....	1	.....
Total	156	41	59	138	6

[1]Includes deaths of all nonresidents, off incoming ships, etc.
Deaths of nonresidents are not taken up in the statistical charts relating to Panama, Colon,

OF NONRESIDENTS [1]—Continued.

Age (in years).									Total.
1–4	5–10	11–20	21–30	31–40	41–50	51–60	61–75	+75	
.....	.....	1	.....	.....	.....	1	.....	.....	2
.....	.....	.....	.....	.....	.....	.....	1	.....	1
.....	.....	.....	.....	.....	1	.....	.....	.....	1
.....	.....	.....	.....	1	.....	.....	.....	.....	1
8	4	11	67	35	35	17	13	1	197

and the Canal Zone.

TABLE V.—DEATHS BY NATIONALITY OR NATIVITY.

Nationality.	Employees.		Nonemployees.		Total.		Grand total.
	Male.	Female.	Male.	Female.	Male.	Female.	
Antigua	6		12	6	18	6	24
Austria			1		1		1
Argentina			1		1		1
Barbados	60		174	146	234	146	380
Bermuda				2		2	2
British Guiana	1		2	3	3	3	6
Bocas del Toro				1		1	1
Chile	1		3		4		4
China			39	4	39	4	43
Colombia	8		68	44	76	44	120
Costa Rica			5	3	5	3	8
Cuba			5	2	5	2	7
Curacao			1		1		1
Demerara			4	3	4	3	7
Dominica				3		3	3
Ecuador			7	3	7	3	10
England			3	1	3	1	4
Fortune Island	5		2	1	7	1	8
France			4	3	4	3	7
Germany			1		1		1
Greece			4	4	4	4	8
Grenada	8		12	10	20	10	30
Guadeloupe	3		5	6	8	6	14
Grand Cayman Island			1		1		1
Honduras			1		1		1
Haiti	2		2	1	4	1	5
Holland			1	1	1	1	2
Ireland			2	1	2	1	3
Inagua	1				1		1
India	1		1		2		2
Italy			11	2	11	2	13
Jamaica	54	1	252	228	306	229	535
Las Tablas			1		1		1
Martinique	7		38	23	45	23	68
Mexico			6	1	6	1	7
Montserrat	2		4	6	6	6	12
Nicaragua			2	2	2	2	4
Nassau			1		1		1
Nevis		1				1	1
Panama	14		277	316	291	316	607
Persia			2		2		2
Peru	2		11	7	13	7	20
Porto Rico			3	2	3	2	5
San Salvador			2		2		2
St. Kitts	1			2	1	2	3
Santa Isabel			1		1		1
St. Lucia	7		17	22	24	22	46
St. Thomas	1		1	3	2	3	5
St. Vincent's	3		9		12		12
Scotland			2		2		2
Spain	4		13	6	17	6	23
Switzerland			1		1		1
San Miguel			1		1		1
Santo Domingo				2		2	2
Trinidad	2		16	9	18	9	27
Turks Island			1		1		1
United States	11		16	14	27	14	41
Venezuela			5	4	5	4	9
Virgin Islands				1		1	1
Unknown			5	3	5	3	8
Total	204	2	1059	901	1263	903	2166

TABLE VI.—STATISTICS RE AMERICAN EMPLOYEES AND THEIR FAMILIES

	Annual death rate per 1,000 population.
White employees from the United States:	
Disease	3.38
External causes	1.03
Total	4.40
White women and children from the United States:	
Disease	4.42
External causes	.94
Total	5.36
White employees from the United States and their families:	
Disease	4.25
External causes	.92
Total	5.17

Number of American children born on Isthmus during year 1918 221
Deaths among American children under 1 year of age 10
Infant mortality rate among American children (number of deaths per 1,000 births) 44.30

TABLE VII.—BIRTHS AND BIRTH RATES IN THE CANAL ZONE AND THE CITIES OF PANAMA AND COLON.

	Average population.	Births.			Rate per 1,000 population.		
		Total.	Alive.	Still-born.	Total.	Alive.	Still-born.
Year, 1918:							
Panama	61,369	2,472	2,308	164	40.28	37.61	2.67
Colon	26,078	861	795	66	33.02	30.48	2.52
Canal Zone	*22,290	770	725	45	34.73	32.69	2.04
Total	109,737	4,103	3,828	275	37.39	34.88	2.51
Year, 1917:							
Panama	61,074	2,943	2,728	215	48.17	44.66	3.52
Colon	25,386	968	895	73	38.08	35.22	2.86
Canal Zone	*27,543	700	657	43	26.30	24.69	1.57
Total	114,003	4,611	4,280	331	40.54	37.63	2.91

* Exclusive of military population.

TABLE VIII.—INFANT MORTALITY RATES IN THE CANAL ZONE AND THE CITIES OF PANAMA AND COLON.

	Average population.	Births.			Deaths among children under 1 year of age.	Death rate per 1,000 births.
		Male.	Female.	Total.		
Year, 1918:						
Panama	61,369	1,205	1,103	2,308	414	179.68
Colon	26,078	418	377	795	156	197.11
Canal Zone	22,290	353	372	725	59	83.89
Total	109,737	1,976	1,852	3,828	629	164.56
Year, 1917:						
Panama	61,074	1,418	1,354	2,772	667	240.37
Colon	25,386	446	462	908	224	245.14
Canal Zone	27,543	349	320	669	85	130.88
Total	114,003	2,213	2,136	4,349	976	224.21

TABLE IX.—DEATHS OF INFANTS BY CAUSE,

Cause of death.	Sex.		Color.		—1 week.	+1 week —1 month.
	M.	F.	W.	B.		
Malaria fever, estivoautumnal	1	....	....	1	.....	.....
Pernicious malaria	1	....	....	1	.....	.....
Measles	....	1	....	1	.....	.....
Whooping cough	1	....	....	1	.....	.....
Diphtheria	....	2	....	2	.....	1
Influenza	1	2	....	3	.....	.....
Dysentery	....	1	....	1	.....	.....
Purulent infection and septicemia	2	....	....	2	.....	.....
Tetanus	1	....	....	1	1	.....
Beriberi	1	....	....	1	.....	.....
Septicemia	....	1	....	1	.....	.....
Tuberculosis, miliary	1	2	....	3	.....	.....
Tuberculous meningitis	3	3	1	5	.....	.....
Tuberculosis of the other organs	2	1	....	3	.....	.....
Disseminated tuberculosis	3	1	....	4	.....	1
Pulmonary tuberculosis	3	1	....	4	.....	1
Rickets	....	1	....	1	.....	.....
Syphilis, primary	2	1	2	1	.....	.....
Syphilis, hereditary	1	2	....	3	.....	.....
Syphilis, period not stated	2	....	....	2	2	.....
Leuchæmia	....	1	....	1	1	.....
Meningitis, simple	1	2	....	3	.....	.....
Meningitis, pneumococcic	....	2	....	2	.....	.....
Meningitis, cerebrospinal	1	....	1	....	.....	.....
Cerebral hemorrhage	....	2	....	2	1	1
Epilepsy	....	1	....	1	.....	.....
Convulsions of infants	2	2	....	4	2	.....
Chorea	....	1	....	1	.....	.....
Diseases of the eyes and their annexa	....	1	....	1	1	.....
Acute endocarditis	1	2	....	3	.....	.....
Organic heart disease	1	....	....	1	.....	.....
Diseases of the lymphatic system	....	1	....	1	.....	.....
Hemorrhage; other diseases of the circulatory system	....	1	....	1	.....	.....
Acute bronchitis	27	21	1	47	8	4
Chronic bronchitis	6	7	....	13	1	.....
Broncho pneumonia	35	29	4	60	3	3
Lobar pneumonia	2	6	....	8	1	.....
Pneumonia unqualified	2	3	....	5	2	.....
Pulmonary congestion	1	....	....	1	1	.....
Asthma	....	1	....	1	.....	.....
Other diseases of the respiratory system	1	....	....	1	1	.....
Diseases of the pharynx	1	....	....	1	1	.....
Acute gastritis	3	6	4	5	1	1
Acute indigestion	3	3	1	5	.....	.....
Other diseases of the stomach (cancer excepted)	1	....	....	1	1	.....
Diarrhea and enteritis	76	66	17	125	2	7
Colitis	12	11	....	23	.....	2
Intestinal obstructions, hernia	1	1	....	2	.....	.....
Abscess of the liver, unqualified	1	....	....	1	.....	.....
Other diseasses of the liver	1	5	....	6	1	.....
Congestion of the liver	....	1	....	1	.....	.....
Acute nephritis	5	2	1	6	.....	.....
Chronic nephritis	1	....	....	1	.....	.....
Pyelonephritis	2	....	....	2	.....	.....
Other diseases of the kidney and annexa	1	1	1	1	.....	.....
Carbuncle	....	1	....	1	.....	.....
Pemphigus	....	1	....	1	.....	.....
Accident of labor	....	1	....	1	1	.....

SEX, COLOR, AGE, AND PLACE OF RESIDENCE.

Age (by months).											Place of residence.			
1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	Panama	Colon.	Canal Zone.	Total.
					1								1	1
										1			1	1
						1					1			1
									1				1	1
								1			2			2
1	2										3			3
									1				1	1
								2			2			2
												1		1
									1		1			1
			1								1			1
1			1					1			2	1		3
1				1		1	3				5	1		6
2	1										1		2	3
		1					2				2	1	1	4
		1				1			1		3	1		4
						1					1			1
2		1									2	1		3
	1			2							1	1	1	3
											1	1		2
												1		1
			1				1			1	3			3
				1				1			2			2
			1								1			1
											2			2
	1					1	1				3		1	4
		1										1		1
												1		1
1									1	1	2	1		3
1											1			1
					1							1		1
						1					1			1
1	6	7		4	3	1	3	2	5	4	26	22		48
		1		1	1	1	4	1	2	1		13		13
2	10	4	5	5	5	4	4	7	9	3	47	12	5	64
			1	3			1			2	6		2	8
						1		1		1	5			5
											1			1
	1										1			1
													1	1
											1			1
2			1	1	1			2			9			9
2	2	1		1								4	2	6
											1			1
15	15	13	11	10	13	8	17	11	19	10	104	32	6	142
2	4	1	4	1	2	3		3		1	22		1	23
	2										1	1		2
						1							1	1
1	1			1	1				1		6			6
1											1			1
	1	2	2					1		1	4	1	2	7
									1			1		1
					2								2	2
	2											1	1	2
		1									1			1
										1	1			1
											1			1

TABLE IX.—DEATHS OF INFANTS BY CAUSE, SEX,

Cause of Death	Sex.		Color		—1 week.	+1 week —1 month.
	M.	F.	W.	B.		
Congenital malformations	5	2	....	7	3	2
Newborn child	3	2	....	5	5	.....
Congenital debility, icterus, and sclerema	4	3	1	6	4	3
Premature birth	21	22	5	38	41	1
Congenital debility	20	20	2	38	21	7
Atrophy of intants	....	1	....	1	.....	.....
Malnutrition	39	31	....	70	2	1
Other causes peculiar to early infancy	16	7	5	18	22	1
External violence	....	2	....	2	.....	.....
Cause not specified or ill-defined	6	2	...	8	1	.....
Total	327	293	46	574	131	36

COLOR, AGE, AND PLACE OF RESIDENCE.—Continued.

Age (by months),											Place of residence.			
1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–11	11–12	Panama	Colon.	Canal Zone.	Total.
1	1	....	....	....	....	....	....	....	....	....	5	2	.....	7
....	....	....	....	....	....	....	....	....	....	....	4	.....	1	5
....	....	....	....	....	....	....	....	....	....	....	5	1	1	7
1	....	....	....	....	....	....	....	....	....	....	26	1	6	43
....	4	....	1	2	....	....	3	1	....	1	28	10	2	40
....	....	....	....	....	....	1	....	....	....	....	.....	1	.....	1
8	8	3	9	4	4	3	7	3	14	4	42	12	16	70
....	....	....	....	....	....	....	....	....	....	....	15	8	.....	23
2	....	....	....	....	....	....	....	....	....	....	.....	1	1	2
1	....	2	....	....	....	....	....	3	....	1	5	2	1	8
48	62	39	38	37	34	29	46	40	47	33	412	148	60	620

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS OF THE

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General diseases.												
Typhoid fever		1			5							
Paratyphoid fever												
Relapsing fever					2							
Malaria			1									
Malarial fever:												
Estivoautumal	16	1	31		258	3					2	
Tertian	12	2	1		52	2						
Quartan	2				3							
Mixed												
Undetermined	1		5		38							
Clinical					1							
Cachexia					2							
Hemoglobinuric fever, malarial			1									
Smallpox					4	1						
Vaccinia	1											
Measles	3				19	2						
Scarlet fever												
Whooping cough												
Diphtheria and croup												
Influenza	138	28	25	1	357	5						
Miliary fever												
Dysentery	4											
Entamebic	4		1		9							
Bacillary		10	1		2							
Unclassified												
Leprosy					1							
Erysipelas	4				1							
Dengue					1							
Chickenpox					21							
German measles	1	1										
Mumps					4							
Yaws												
Filariasis					2							
Acute infectious jaundice (Weil's disease)												
Purulent infection and septicemia	2	1	2		7						2	
Pyemia											1	
Septicemia							1					
Pyemia and septicemia, pneumococcic											1	
Tetanus											1	
Actinomycosis												
Pellagra			1									
Beriberi												

PANAMA CANAL FOR THE YEAR, 1918.

Nonemployees.										Nonresidents.								Total discharges.	Total deaths.
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White.			Black.		White.		Black.		White.		Black.			
Soldiers.	Others.				Soldiers.	Others.													
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
....	1	2	2	4	....	....	....	....	....	2	....	....	....	1	....	....	....	17	1
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....
....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....
3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....
140	24	14	36	35	3	1	....	2	1	10	....	1	....	1	....	....	....	569	10
75	16	10	4	5	....	....	....	....	1	7	....	....	....	....	....	....	....	186	1
1	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	8	....
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
32	1	3	....	8	....	....	....	....	....	2	....	....	....	....	....	....	....	90	....
8	1	1	....	3	....	....	....	....	1	....	....	....	....	....	....	....	....	14	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	2	3	41	55	....	....	....	....	....	....	1	12	12	....	....	....	....	126	....
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
44	32	72	16	17	....	....	....	....	1	4	1	1	....	....	....	....	....	271	1
....	1	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	2	....
....	3	2	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....	9	....
1	4	....	8	5	1	....	....	1	....	1	....	....	....	....	....	....	....	19	2
1452	92	78	49	48	6	1	1	....	....	98	1	15	....	1	....	....	....	2,385	9
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
19	5	....	2	1	....	....	....	1	....	7	....	....	....	....	....	....	....	39	1
1	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	15	....
....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
....	1	....	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....
....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7	....
2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
....	1	3	11	8	....	....	....	....	....	....	....	....	....	....	....	....	....	44	....
....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....
50	2	1	1	1	....	....	....	....	....	1	....	....	....	....	....	....	....	66	....
....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
6	4	2	....	3	2	2	....	2	1	3	....	....	....	....	....	....	....	30	10
....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	2	1
....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	2
....	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	1	1
....	....	....	....	....	....	....	....	1	3	....	....	....	....	....	....	....	....	1	4
....	1	....	2	2	....	....	....	1	....	1	....	....	....	....	....	....	....	6	1

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS OF THE

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General diseases—Continued.												
Tuberculosis of the lungs	3	1	6		28				4		30	
Acute miliary tuberculosis												
Tuberculous meningitis												
Abdominal tuberculosis					1							
Pott's disease		1			1						2	1
Tuberculosis of bones and joints	2											
Tuberculosis of other organs			1									
Tuberculosis of the skin												
Tuberculosis of the lymph glands					1					1		1
Tuberculosis of the genito-urinary organs			1		2							
Tuberculous abscess												
Disseminated tuberculosis					1						3	
Syphilis:												
Primary			2		12							
Secondary	3		1		6							
Tertiary	6	1	8		142	1					2	
Hereditary												
Period not stated					1							
Gonococcus infection					2							
Gonorrhea	8				77							
Gonorrheal arthritis					7							
Gonorrheal bubo	1				1							
Gonorrheal orchitis and epididymitis	2		2		19							
Gonorrheal ophthalmia					4							
Soft chancre	2		5		54							
Adenitis chancroidal					11							
Cancer and other malignant tumors of the buccal cavity												
Cancer and other malignant tumors of the stomach and liver	1										2	
Cancer and other malignant tumors of the peritoneum, intestines, rectum									1			
Cancer and other malignant tumors of the female genital organs						1						
Cancer and other malignant tumors of the breast												
Cancer and other malignant tumors of the skin	1				1							
Cancer and other malignant tumors of other organs and of organs not specified	1				1						2	

PANAMA CANAL FOR THE YEAR, 1918.—Continued.

Nonemployees.										Nonresidents.									
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White.			Black.		White.		Black.		White.		Black.		Total discharges.	Total deaths.
Soldiers.	Others.				Soldiers.	Others.													
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
36	2	4	3	20	...	3	1	18	26	9	....	....	....	1	1	2	2	112	88
....	....	....	....	....	....	....	1	1	1	....	....	....	....	....	....	....	....	....	3
....	1	....	1	....	1	....	....	2	2	....	....	....	....	....	....	....	....	2	5
....	....	1	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....
3	....	....	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	8	3
1	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
....	....	....	....	....	....	....	....	1	....	1	....	....	....	....	....	....	....	2	1
1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	2	....
....	....	2	4	3	....	....	....	....	....	....	....	....	....	....	....	....	....	10	2
1	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	6	....
....	....	....	....	....	....	....	....	1	4	....	....	....	....	....	....	....	....	....	5
....	....	....	3	....	....	....	1	3	....	....	....	....	....	....	....	....	....	4	7
17	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	34	....
51	1	....	1	....	....	....	....	....	....	5	....	....	....	....	....	....	....	68	....
88	6	9	22	45	1	1	....	....	1	25	....	2	....	....	....	....	....	355	5
2	1	....	3	2	....	....	....	....	....	....	....	....	....	....	....	....	....	8	....
17	....	2	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	22	....
1	....	2	1	6	....	....	....	....	....	....	....	....	....	....	....	....	....	12	....
99	9	....	7	6	....	....	....	....	....	29	....	....	....	....	....	....	....	235	....
2	....	....	3	1	....	....	....	....	....	3	....	....	....	....	....	....	....	10	....
2	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....
13	3	....	4	1	....	....	....	....	....	2	....	....	....	....	....	....	....	46	....
4	1	....	1	6	....	....	....	....	....	....	....	....	....	....	....	....	....	16	....
70	2	1	1	3	....	....	....	....	....	18	....	2	....	....	....	....	....	158	....
12	3	1	....	1	....	....	....	....	....	4	....	1	....	....	....	....	....	32	....
2	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	3	....
....	1	....	....	3	....	....	....	....	....	4	....	....	....	....	....	....	....	9	2
....	1	1	....	1	....	....	....	....	1	1	....	....	....	....	....	....	....	4	
....	....	2	....	4	....	....	....	....	2	....	....	....	....	....	....	....	....	7	
....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
....	....	1	1	2	....	....	....	....	1	2	....	....	....	....	....	....	....	8	3

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General diseases.—Continued.												
Other tumors (tumors of the female genital organs excepted)			1		4							
Acute articular rheumatism	1			1								
Chronic rheumatism and gout	2											
Arthritis deformans			1									
Scurvy	1											
Diabetes	1										1	
Exophthalmic goitre												
Leukemia lymphatic											1	
Anemia, secondary, cause not determined					1	1						
Other general diseases	5		1		3							
Purpura hemorrhagica	1											
Alcoholism (acute or chronic)	3											
Alcoholism, acute	3		1									
Alcoholism, chronic												
Alcoholic psychosis					1							
Chronic lead poisonings		1			1							
Other chronic poisonings												
Drug habit												
Simple meningitis											4	
Cerebrospinal fever		2									1	
Pneumococcus meningitis									1		3	
Locomotor ataxia	1				1							
Acute anterior polio-myelitis												
Lateral sclerosis												
Cerebral hemorrhage, apoplexy	2			1	9				1		4	
Softening of the brain												
Paralysis without specific cause												
General paralysis of the insane							1					
Other forms of mental alienation				1	5							
Dementia precox					2							
Epilepsy	3				6							
Convulsions (nonpuerperal) (5 years and over)					1							
Convulsions of infants (under 5 years of age												
Chorea												
Hysteria		1										
Neuralgia	2				1							
Neuritis	8	1		2	8							
Other diseases of the nervous system	4	1			5							
Neurasthenia	11	4			6				1			

OF THE PANAMA CANAL FOR THE YEAR, 1918.—Continued.

Nonemployees.										Nonresidents.								Total discharges.	Total deaths.
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White.			Black.		White.		Black.		White.		Black.			
Soldiers.	Others.				Soldiers.	Others.													
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
8	1	....	1	1	....	....	....	....	....	1	....	....	....	....	....	....	....	17	....
1	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....
....	1	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	5	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	2	3	....	2	....	....	....	....	1	....	....	....	....	....	....	....	....	8	2
....	....	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
1	....	....	....	3	....	....	....	....	....	1	1	....	....	....	....	....	....	8	....
8	5	6	....	1	....	....	....	....	....	2	....	1	....	....	....	....	....	32	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
7	4	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	15	....
12	2	....	1	....	....	....	....	....	....	6	....	....	....	....	....	....	....	28	....
4	1	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	7	....
2	1	....	2	....	....	....	....	....	....	1	....	....	....	....	....	....	....	7	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4
3	1	....	....	....	....	2	....	....	....	3	1	....	....	....	....	....	....	10	3
....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	6
....	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....
....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....
....	....	....	1	3	1	....	....	3	1	1	....	....	....	....	....	....	....	17	10
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
3	3	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	8	....
1	....	....	1	1	....	....	....	1	....	....	....	....	....	....	....	....	....	3	2
22	7	4	6	7	....	....	....	....	1	7	....	2	....	....	....	....	....	61	1
21	2	1	7	10	....	....	....	2	....	....	....	....	....	....	....	....	....	43	2
2	3	....	2	5	....	....	....	....	1	1	....	....	....	....	....	1	1	22	3
2	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....
....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
13	1	4	....	6	....	....	....	....	....	....	....	....	....	....	....	....	....	25	....
2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....
16	1	3	2	2	....	....	....	....	....	7	....	1	....	....	....	....	....	51	....
6	3	2	....	3	....	....	....	1	....	1	....	....	....	....	....	....	....	25	1
81	2	19	1	13	....	....	....	....	....	2	3	1	....	....	....	....	....	143	1

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS OF

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases—Continued.												
Diseases of the eyes and their annexa	8	...	...	8	71	1	...	...	...	...	...	...
Follicular conjunctivitis	3	...	...	...	3	1	...	...	...	...	...	...
Trachoma	...	...	...	...	4	...	...	...	...	...	...	...
Diseases of the ears	13	1	...	2	9	...	...	...	...	...	...	...
Diseases of the circulatory system.												
Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...
Acute endocarditis	...	...	...	...	...	...	...	...	...	...	1	...
Organic diseases of the heart	1	...	...	2	42	...	2	1	...	...	6	1
Angina pectoris	1	...	...	...	...	...	...	...	...	...	...	...
Diseases of the arteries, atheroma, etc.	...	...	...	...	1	...	...	...	...	...	...	...
Aneurysm	1	...	...	...	3	...	...	...	...	...	1	...
Arteriosclerosis	2	...	...	...	5	...	...	...	...	...	1	...
Embolism and thrombosis	...	...	...	...	1	...	...	...	...	...	...	...
Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)	8	...	...	...	2	...	...	...	...	...	...	...
Hemorrhoids	17	2	...	...	26	...	...	...	...	...	...	...
Varices	1	...	...	...	3	...	...	...	...	...	...	...
Varicocele	7	...	...	...	2	...	...	...	...	...	...	...
Phlebitis	...	...	...	...	2	...	...	...	...	...	...	...
Diseases of the lymphatic system (lymphangitis, etc.)	2	1	...	...	9	...	...	...	...	...	...	...
Lymphadenitis (nonvenereal)	4	1	...	2	35	...	...	...	...	...	...	...
Hemorrhage; other diseases of the circulatory system	1	...	...	...	...	...	...	...	...	...	1	...
Diseases of the respiratory system.												
Diseases of the nasal fossæ	16	2	...	...	5	...	...	...	...	...	...	...
Adenoid vegetations	...	...	...	...	...	...	...	...	...	...	...	...
Myiasis of nasal fossæ and sinuses	1	...	...	...	...	...	...	...	...	...	...	...
Diseases of the larynx	...	...	...	...	1	...	...	...	...	...	...	...
Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the thyroid body	1	...	...	...	...	...	...	...	...	...	...	...
Acute bronchitis	19	2	...	9	16	1	...	...	...	...	...	...
Chronic bronchitis	2	2	...	4	4	...	...	1	...	...	...	...
Broncho-pneumonia	...	...	...	1	5	...	...	...	...	...	3	...
Pneumonia (unqualified)	...	...	...	...	...	...	...	1	...	...	...	...
Lobar pneumonia	...	1	...	1	40	...	...	...	...	...	25	...

THE PANAMA CANAL FOR THE YEAR, 1918.—Continued.

Nonemployees.										Nonresidents.								Total discharges.	Total deaths.
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White.			Black.		White.		Black.		White.		Black.			
Soldiers.	Others.				Soldiers.	Others.													
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
74	6	5	23	29	...	...	...	...	...	5	...	3	...	...	...	...	...	233	...
7	...	2	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	22	...
...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	6	...
108	19	16	8	15	...	...	...	...	...	5	1	...	...	...	...	...	...	197	...
...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1
9	4	8	4	13	3	1	...	5	4	5	...	...	...	...	2	...	...	88	25
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	5	2
...	4	...	...	...	...	1	...	7	3	1	...	...	...	...	...	...	...	12	12
...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
4	...	3	1	3	...	...	...	...	...	4	...	...	...	...	...	...	...	25	...
52	2	10	2	9	...	...	...	...	...	3	2	...	...	...	...	...	...	125	...
7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...
58	3	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	73	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
18	9	2	3	9	...	...	...	...	...	2	...	...	...	...	...	...	...	55	...
59	7	5	6	1	...	...	...	...	...	2	...	...	...	...	...	...	...	122	...
1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3	2
79	2	3	...	4	...	...	...	...	...	1	...	...	...	...	...	...	...	112	...
1	3	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...
4	1	4	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...
...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
5	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	7	...
4	1	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...
55	21	15	13	13	...	...	...	...	1	9	1	2	...	...	...	...	...	176	1
17	2	3	1	1	...	...	...	...	...	5	...	...	...	...	...	...	...	41	1
6	...	3	5	4	1	...	...	6	2	...	...	...	...	...	...	...	...	24	12
3	...	2	2	1	...	...	3	...	...	1	...	...	...	...	...	...	...	9	4
13	4	2	23	17	12	3	1	7	15	2	...	...	...	...	5	...	...	103	68

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS OF

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the respiratory system.—Continued.												
Pleurisy	9	1			14	1						
Empyema												
Pulmonary congestion, pulmonary apoplexy											1	
Gangrene of the lungs												
Asthma	3			1	2						1	
Pulmonary emphysema	1	1										
Other diseases of the respiratory system (tuberculosis excepted)					1							
Abscess of lungs					1							
Diseases of the digestive system.												
Diseases of the mouth and annexa		2			5						1	
Diseases of the teeth and gums	5	2		1	8							
Stomatitis												
Diseases of the pharynx	3				2						1	
Pharyngitis	2				2							
Follicular tonsillitis	40	4		2	42	1			1			
Ulcer of the stomach	8		1	3	6							
Other diseases of the stomach (cancer excepted)	4				2							
Acute gastritis	7	1			1							
Chronic gastritis	5	1	1		5							
Acute indigestion	3	1			4							
Diarrhea and enteritis (under 2 years)					1							
Colitis (under 2 years)	1				1							
Diarrhea and enteritis (2 years and over)	7		3		24							
Colitis (2 years and over)	3	1			3							
Ankylostomiasis			2		11							
Intestinal parasites	2	1	1		1							
Ascariasis			2									
Teniasis	1											
Appendicitis and typhilitis												
Acute appendicitis	18	3	1		8							
Chronic appendicitis	16	6			1							
Hernia, intestinal obstructions					1							
Inguinal hernia	12		7		119							
Other hernias	3				1							

THE PANAMA CANAL FOR THE YEAR, 1918.—Continued.

Nonemployees.										Nonresidents.								Total discharges.	Total deaths.
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White.			Black.		White.		Black.		White.		Black.			
Soldiers.	Others.				Soldiers.	Others.													
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
11	1	....	7	10	....	....	....	1	....	4	....	....	....	....	....	....	....	58	1
....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	1	2
1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	2
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....	....	1
19	4	2	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	33	1
1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
8	3	4	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	27	1
14	4	9	2	5	....	....	....	....	....	3	....	....	....	....	....	....	....	53	....
1	3	5	3	6	....	....	....	....	....	....	....	....	....	....	....	....	....	18	....
5	7	3	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	22	1
3	5	7	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	23	....
157	67	77	38	70	....	....	....	....	....	11	2	....	....	....	....	....	....	511	1
3	5	3	....	2	....	....	....	....	....	1	....	....	....	....	....	....	....	32	....
8	3	4	....	2	....	....	....	....	....	1	....	....	....	....	....	....	....	24	....
11	2	2	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	25	....
6	....	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	21	....
7	3	4	....	7	....	....	....	....	....	2	....	....	....	....	....	....	....	31	....
....	6	6	6	2	....	1	1	1	2	....	....	....	....	....	....	....	....	20	5
1	4	5	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	14	....
11	8	9	7	11	....	....	....	1	1	....	....	....	....	....	....	....	....	80	2
14	1	4	1	1	....	....	....	1	1	1	....	....	....	....	....	....	....	29	2
71	3	2	....	3	....	....	....	2	....	1	....	....	....	....	....	....	....	93	2
3	1	1	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	12	....
....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....
1	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....
3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
49	18	14	1	5	2	....	....	....	....	3	....	1	....	....	....	....	....	121	2
36	6	27	....	2	....	....	....	....	....	4	....	....	....	....	....	....	....	98	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
50	12	2	20	5	....	....	....	....	....	8	....	2	....	....	....	....	....	237	....
8	....	2	5	6	....	....	....	....	....	1	....	....	....	....	....	....	....	26	....

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS OF

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the digestive system—Continued.												
Intestinal obstruction	1				1						3	
Other diseases of the intestines	14		3	1	25						1	
Constipation			1	1	6							
Duodenal ulcer	5				4							
Hydatid tumor of the liver												
Cirrhosis of the liver	1		2		1						2	
Biliary calculi	2		1									
Other diseases of the liver	4	1			2							
Abscess of liver (unqualified)	1										1	
Abscess of the liver, entamebic		2			1							
Cholecystitis	5	4	2		2							
Diseases of the spleen												
Simple peritonitis (nonpuerperal)						1					2	
Other diseases of the digestive system (cancer and tuberculosis excepted)					2							
Nonvenereal diseases of the genito-urinary system and annexa.												
Acute nephritis					2						3	
Bright's disease (chronic nephritis)	5		2		28		2				11	
Other diseases of the kidney and annexa	7		2		4							
Movable kidney	1											
Pyelo-nephrosis	4											
Calculi of the urinary passages	8				2							
Diseases of the bladder					1							
Cystitis	6	2	2		1							
Diseases of the urethra, urinary abscess, etc			1		35							
Stricture of the urethra, nonvenereal	4		1		30							
Diseases of the prostate	1											
Acute prostatitis												
Chronic prostatitis	1											
Hypertrophy of prostate												
Nonvenereal diseases of the male genital organs	5		3		39							
Hematocele												
Hydrocele	3				50							
Lymph scrotum and varix												
Uterine hemorrhage (nonpuerperal)		1										
Uterine tumor (noncancerous)												

THE PANAMA CANAL FOR THE YEAR, 1918.—Continued.

Nonemployees.										Nonresidents.								Total discharges.	Total deaths.
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White.			Black.		White.		Black.		White		Black.			
Soldiers.	Others.				Soldiers.	Others.													
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
1					1			1										3	5
35	6	20	3	8						5								120	1
9	2	8	1	6						1	1							36	
3	1									1								14	
	1													1				1	1
2						1		2						1				6	6
	2	7						1			1							13	1
24	3	2	1	1	1			1		3								41	2
	1							1										2	2
4																		7	
2	3	4		2						1								25	
			1															1	
1		2	1	7					5									12	7
	6	4		2							1	1						16	
	4	3	3	5				1	2									17	6
8	5	6	5	12		1		4	5	2				1				73	24
8	6	20		12						2	1							62	
																		1	
7	1	6		3				2	1	1				1				22	4
6	3	5								1								25	
		1	1	5					1	1								9	1
4		24	2	1						1								43	
3		4	2	5						1								51	
9	1		2							1								48	
1																		2	
1	2																	3	
6																		7	
	1									1								2	
69	19		12							5		1						153	
			1															1	
18	1		2							1								75	
			1															1	
		10		6														17	
		3		31														34	

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Nonvenereal diseases of the genito-urinary system and annexa—Cont.												
Other diseases of the uterus		4				1						
Metritis		1										
Cysts and other tumors of the ovary						2						
Salpingitis and other diseases of the female genital organs		3				4						
Nonpuerperal diseases of the breast (cancer excepted)		1										
Benign tumor of breasts												
The puerperal state.												
Normal labor		1										
Accidents of pregnancy		1										
Extra-uterine pregnancy												
Hyperemesis gravidarum		1										
Abortion		1				2						
Puerperal hemorrhage												
Other accidents of labor												
Puerperal septicemia												
Puerperal albuminuria and convulsions												
Eclampsia												
Puerperal phlegmasia alba dolens, embolus, sudden death												
Following childbirth (not otherwise defined)												
Puerperal insanity												
Puerperal diseases of the breast												
Diseases of the skin and cellular tissue.												
Gangrene											1	
Furuncle	2	1	1		7							
Carbuncle	3		1		1	1						
Acute abscess	4	4	5		41							
Phlegmon and cellulitis	13		6		29	1		1	1	1		
Trichophytosis												
Scabies					2							
Pemphigus contagiosus												
Elephantiasis					1							
Myiasis of skin			1									
Dhobie itch	2				4							

OF THE PANAMA CANAL FOR THE YEAR, 1918.—Continued.

Nonemployees.										Nonresidents.								Total discharges.	Total deaths.
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White			Black.		White.		Black.		White		Black.			
Soldiers.	Others.				Soldiers.	Others.													
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
		47		74							1							127	
		4		20														25	
		17		34														53	
		39		109					2									155	2
				8														9	
		56		22							1							79	
		178		101							1							281	
		14		28														43	
		11		4					1									15	1
		25		11					2									37	2
		42		26					1									71	1
		6		5					2									11	2
		21		17														38	
		1		2			1		2									3	3
		2		3														5	
				2					1		1							3	1
				1														1	
				5														5	
		1																1	
		6																6	
		1	1					1										2	2
8	1	15	2															37	
4	1	1		2						1								15	
37	7	11	19	23						9		1						163	
29	6	7	2	5						7		1						106	3
2																		2	
	1	1																4	
		1	2	2														5	
																		1	
																		1	
13				2						1								22	

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the skin and cellular tissue. Continued.												
Prickly heat	2											
Ulcer of the skin	4		1		31							
Impetigo contagiosa	1		1		3							
Urticaria		2										
Ingrowing nail	9	2			1							
Other diseases of the skin and annexa.	13	1	1		15	1						
Diseases of the bones and of the organs of locomotion.												
Diseases of the bones (tuberculosis excepted)	4		1		4							
Caries (nontuberculous)												
Mastoid abscess		1										
Osteomyelitis					2							
Periostitis												
Diseases of the joints (tuberculosis and rheumatism excepted)	2				1							
Ankylosis					1							
Arthritis	3	1	1		21							
Synovitis	3											
Other diseases of the organs of locomotion	9				13							
Malformations.												
Congenital malformations (stillbirth not included)	1				29							
Diseases of early infancy.												
Newborn child												
Premature birth												
Congenital debility												
Atrophy of infants												
Malnutrition												
Other diseases peculiar to early infancy (including various consequences of labor)												
Old age.												
Senility												

OF THE PANAMA CANAL FOR THE YEAR. 1918.—Continued.

Nonemployees,										Nonresidents.						Total discharges.	Total deaths.
Discharges.					Deaths.					Discharges.				Deaths.			
White.			Black.		White.			Black.		White.		Black.		White	Black.		
Soldiers.	Others.				Soldiers.	Others.											
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
3	....	5	9	13	....	....	....	....	....	3	....	....	....	....	....	....	....	69	....
....	5	5	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	17	....
2	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....
15	3	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	37	....
37	8	10	5	15	....	....	....	....	....	9	....	....	....	....	....	....	....	115	....
8	1	....	....	3	....	....	....	....	....	2	....	....	....	....	1	....	....	23	1
....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
4	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	6	....
4	....	2	3	2	....	....	....	....	....	....	....	....	....	....	....	....	....	13	....
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
5	1	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	11	....
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
4	1	3	2	5	....	....	....	....	....	2	1	....	....	....	....	....	....	46	....
8	....	....	1	2	....	....	....	....	....	1	....	....	....	....	....	....	....	15	....
39	2	9	4	4	....	....	....	....	....	6	....	....	....	....	....	....	....	86	....
20	9	....	22	4	....	....	....	....	....	1	....	1	....	....	....	....	....	87	....
....	138	102	58	49	....	1	....	....	....	....	....	....	....	....	....	....	....	347	1
....	2	1	1	2	....	2	1	6	2	....	....	....	....	....	....	....	....	6	11
....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	1
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1
....	....	....	8	6	....	....	....	12	11	....	....	....	....	....	....	....	....	14	23
....	....	....	2	....	....	....	1	5	....	....	....	....	....	....	....	....	....	2	6
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....

TABLE X.—DISCHARGES AND DEATHS IN THE HOSPITALS

Diseases.	Employees.											
	Discharges.						Deaths.					
	White.				Black.		White.				Black.	
	Americans.		Europeans.				Americans.		Europeans.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Affections produced by external causes.												
Suicide by poisoning							1					
Suicide by firearms												
Suicide by cutting or piercing instruments												
Poisoning by food	10	1	2		9	1						
Other acute poisonings	2				1							
Venomous bites and stings					1							
Conflagration					1							
Burns (conflagrations excepted)	3	1			10							
Absorption of deleterious gases (conflagration excepted)					1							
Traumatism by firearms	2											
Traumatism by cutting or piercing instruments	2		10		117							
Traumatism by fall	13		3		64						2	
Traumatism by machines	4		4		26						2	
Traumatism by other crushings	4				42						3	
Railroad traumatism	5		1		21						2	
Dynamite traumatism					1							
Traumatism by landslides											1	
Injuries by animals					2							
Starvation					1							
Effects of heat												
Heat exhaustion					1							
Lightning												
Electricity (lightning excepted)					1							
Homicide by firearms												
Homicide by cutting or piercing instruments												
Homicide by other means												
Fractures (cause not specified)	7		10		19							
Dislocations					6	1						
Sprains	5	1			11	2						
Other external violence	21	3	53		170	1					2	
Ill-defined diseases.												
Ill-defined organic disease	1				1							
Cause of death not specified or ill-defined											2	
Infections of undetermined origin	11		4		9						1	
No disease	5		2		31	1						
Feigned disease												
Total	772	135	280	6	2761	40	9	2	10	2	144	3

OF THE PANAMA CANAL FOR THE YEAR, 1918.—Continued.

Nonemployees.										Nonresidents.									
Discharges.					Deaths.					Discharges.				Deaths.					
White.			Black.		White			Black											
Soldiers.	Others.				Soldiers.	Others.				White.		Black.		White		Black.		Total discharges.	Total deaths.
M.	M.	F.	M.	F.	M.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
							1												2
					1														1
								1											1
20	3	3	5	1						1								56	
4		1		5														13	
2																		3	
1				1					1									3	1
3	1		5	3					1	4		3						33	1
																		1	
13	3		5					3										23	3
12	3	2	12	6						4								168	
33	17	11	10	9	1	1		4	1	13		2				1		175	10
3			3							3								43	2
3	2	4	6			1			1									61	5
1	2		7	14	1													51	3
1																		2	
																			1
4	1																	7	
																		1	
1										1								2	
																		1	
1																		1	
										1								2	
									1										1
									2										1
36	6	3	4	5						6								96	
4	1	1		1														14	
13	2	1	2															37	
39	5	6	13	9	1			1	1	13		1						334	5
3		1																6	
2	1							2	2									3	6
21	4	6	15	9	2					7	4							90	3
74	22	111	20	59						4	6							335	
2			1	3														6	
4317	922	1500	753	1497	42	23	13	122	139	498	35	60	12	17	1	5	3	13588	535

TABLE XI.—CONSOLIDATED HOSPITAL REPORT.
[A.=White Americans; F.=White foreigners; B.=Black.]

	Remaining January 1, 1918.			Admitted.			Died.			Discharged.		
	A.	F.	B.	A.	F.	B.	A.	F.	B.	A.	F.	B.
Ancon Hospital:												
Employees	13	26	148	757	208	2,739	8	7	104	737	213	2,527
Soldiers	48	...	...	4,124	...	...	25	...	...	4,012	...	...
Panama pay patients	...	...	...	...	...	4	...	...	1	...	...	...
Other pay patients	11	24	80	1,324	661	1,458	11	13	132	1,285	628	1,333
Charity patients	31	5	25	336	58	484	3	3	29	352	53	444
Total	103	55	253	6,541	927	4,685	47	23	266	6,386	894	4,304
Corozal Hospital (insane):												
Employees	1	2	8	3	2	16	1	1	4	2	1	4
Soldiers	4	...	...	41	...	...	...	...	...	3	...	...
Panama pay patients	4	46	209	...	30	85	1	6	42	...	11	19
Other pay patients	...	2	6	...	6	13	...	...	6	...	5	11
Charity patients	...	8	69	1	5	27	...	...	12	1	...	14
Total	9	58	283	45	43	141	2	7	64	31	17	48
Grand total	112	113	536	6,586	970	4,826	49	30	330	6,421	911	4,352
Corozal Farm (cripples):												
Employees	...	9	51	...	5	34	...	...	...	...	6	41
Chronic ward:												
Charity patients	...	...	23	...	...	15	...	...	...	...	...	7
Nonresidents:												
Hospital	...	18	...	...	432	...	...	9	...	...	399	...
Asylum	...	59	...	...	6	...	...	1	...	...	5	...
Colon Hospital:												
Employees	6	2	14	174	38	479	...	...	38	178	30	309
Soldiers	2	...	...	318	56	1	15	...	...	238	47	1
Panama pay patients	...	...	2	2	11	94	...	...	11	1	5	52
Other pay patients	20	4	5	354	272	395	8	11	28	312	199	319
Charity patients	1	...	2	71	18	58	...	1	5	60	15	40
Total	29	6	23	919	395	1,027	23	12	77	780	296	721
Palo Seco Leper Asylum:												
Panama pay cases	...	1	37	...	1	13	...	...	4	...	...	3
Charity patients	...	1	28	...	...	7	...	1	3	...	...	1
Total	...	2	65	...	1	20	...	1	7	...	...	4
Grand total:												
Employees	20	39	221	974	253	3,268	9	8	141	914	250	2,881
Soldiers	54	...	...	4,483	56	1	40	...	...	4,285	47	1
Panama pay patients	4	47	239	2	42	196	1	6	58	1	16	74
Other pay patients	31	30	91	1,678	939	1,866	19	24	166	1,594	832	1,663
Charity patients	32	14	147	408	81	591	3	5	49	413	68	596
Nonresidents*	...	77	...	...	438	...	...	18	...	...	404	...
Total	141	207	698	7,505	1,809	5,922	72	61	414	7,207	1,617	5,125

* Prior to April 1, 1918, nonresident patients of Corozal Hospital were not included in its report; and accordingly do not appear in the quarterly report of this department, for January, February, and March, 1918.

TABLE XI.—CONSOLIDATED HOSPITAL REPORT.—Continued.
[A.=White Americans; F.=White foreigners; B.=Black.]

	Transferred.			Remaining December 31, 1918.			Average number constantly sick.			
	A.	F.	B	A.	F.	B.	A.	F.	B.	Total.
Ancon Hospital:										
Employees	2	5	31	23	9	225	21.19	146.21	140.99	308.39
Soldiers	32	...	...	103	...	...	127.59	.....	.....	127.59
Panama pay patients	...	...	3	...	...	...	.....	.....	.22	.22
Other pay patients	1	8	23	41	36	50	35.11	27.36	67.29	129.96
Charity patients	...	5	22	12	2	14	13.33	3.23	24.78	42.04
Total	35	18	79	179	47	289	197.22	177.70	233.28	608.20
Corozal Hospital (insane):										
Employees	...	...	2	1	2	14	1.53	2.23	10.11	13.87
Soldiers	1	...	...	9	...	...	7.11	.....	.....	7.11
Panama pay patients	...	...	2	3	59	222	3.05	51.54	210.48	265.07
Other pay patients	...	...	...	...	3	2	.....	4.00	4.84	8.84
Charity patients	...	...	...	...	13	70	.31	10.01	69.00	79.32
Total	1	...	4	13	77	308	12.00	67.78	294.43	374.21
Grand total	36	18	83	192	124	597	209.22	245.48	577.71	982.41
Corozal Farm (cripples):										
Employees	...	1	...	...	7	44	.....	6.48	40.55	47.03
Chronic ward:										
Charity patients	...	...	5	...	...	26	.....	0.15	30.75	30.90
Nonresidents:										
Hospital	...	3	...	...	39	...	.....	18.63	.....	18.63
Asylum	...	...	...	...	51	...	.....	40.81	.....	40.81
Colon Hospital:										
Employees	4	7	141	1	3	10	3.85	1.34	15.05	20.24
Soldiers	60	8	...	7	1	...	8.45	1.21	.01	9.67
Panama pay patients	1	5	31	...	1	2	.02	.28	2.05	2.35
Other pay patients	45	58	39	9	8	14	9.21	6.57	14.47	30.25
Charity patients	8	2	14	4	...	1	2.09	.35	.89	3.24
Total	118	80	225	21	13	27	23.53	9.75	32.47	65.75
Palo Seco Leper Asylum:										
Panama pay cases	...	...	...	...	2	43	.....	1.21	40.78	41.99
Charity patients	...	...	...	...	...	31	.....	.95	28.03	28.98
Total	...	...	...	...	2	74	.....	2.16	68.81	70.97
Grand total:										
Employees	6	13	174	25	21	293	26.57	156.26	206.70	389.53
Soldiers	93	8	...	119	1	...	143.15	1.21	.01	144.37
Panama pay patients	1	5	36	3	62	267	3.07	53.03	253.53	309.63
Other pay patients	46	66	62	50	47	66	44.32	38.13	86.60	169.05
Charity patients	8	7	41	16	15	142	15.64	15.39	153.45	184.48
Nonresidents*	...	3	...	...	90	...	.....	59.44	.....	59.44
Total	154	102	313	213	236	768	232.75	323.46	709.29	1,256.50

* Prior to April 1, 1918, nonresident patients of Corozal Hospital were not included in its report: and accordingly do not appear in the quarterly report of this department, for January, February ,and March, 1918.

TABLE XII.—CONSOLIDATED DISPENSARY REPORT.

EMPLOYEES TREATED IN QUARTERS.

	Remaining Jan. 1, 1918.		Admitted.		Died.		Discharged.		Transferred.		Remaining Dec. 31, 1918.		Days lost.		
	W.	B.	W.	B.	W.	B.	W.	B.	W.	B.	W.	B.	W.	B.	Total
Ancon	2	...	1,181	....	...	...	1,157	....	18	...	8	....	2,582	.....	2,582
Balboa	3	2	1,968	151	...	...	1,876	72	93	75	2	6	4,903	495	5,398
Pedro Miguel	2	...	198	8	...	...	193	6	7	2	...	....	459	21	480
Paraiso (1)	...	...	16	32	...	...	11	20	5	12	...	....	42	66	108
Gamboa (2)	...	...	...	6	...	...	...	6	...	...	...	...	...	14	14
Gatun	...	...	154	81	...	...	120	59	34	22	...	....	372	522	894
Cristobal	1	15	988	1502	...	...	981	1470	1	4	7	43	2,624	14018	16642
Total	8	17	4,505	1780	...	...	4,338	1633	158	115	17	49	10982	15136	26118

ALL CASES TREATED BUT NOT EXCUSED.

	Employees.			Nonemployees.			Total.		
	W.	B.	Total.	W.	B.	Total.	W.	B.	Total.
Ancon	12,524	43,743	56,267	11,944	23,990	35,934	24,468	67,733	92,201
Balboa	46,152	31,785	77,937	41,639	20,941	62,580	87,791	52,726	140,517
Pedro Miguel	17,644	24,570	42,214	15,277	15,200	30,477	32,921	39,770	72,691
Paraiso (1)	3,029	8,286	11,315	1,987	3,809	5,796	5,016	12,095	17,111
Gamboa (2)	404	2,571	2,975	250	2,917	3,167	654	5,488	6,142
Gatun	3,538	10,747	14,285	6,117	7,758	13,875	9,655	18,505	28,160
Cristobal	14,924	48,061	62,985	15,585	20,899	36,484	30,509	68,960	99,469
Total	98,215	169,763	267,978	92,799	95,514	188,313	191,014	265,277	456,291

(1) Paraiso dispensary closed, effective May 14, 1918.
(2) Gamboa dispensary closed, effective August 1, 1918.

TABLE XIII.—CONSOLIDATED ADMISSION REPORT.

	White.	Black.	Total.
Admissions to hospitals, excluding Corozal farm and chronic ward	9,318	5,933	15,251
Admissions of employees to quarters	4,505	1,778	6,283
Total admissions to hospitals and quarters	13,823	7,711	21,534
Less number of patients transferred between hospitals and from quarters to hospitals, whose admissions are duplicated in the above figures	415	453	868
Net admissions to hospitals and quarters	13,408	7,258	20,666
EMPLOYEES.			
Employees admitted to hospitals	1,187	3,268	4,455
Employees admitted to quarters	4,505	1,778	6,283
Total admissions of employees	5,692	5,046	10,738
Less number transferred between hospitals and from quarters to hospitals, whose admissions are duplicated in the above figures	178	289	467
Net admissions of employees	5,514	4,757	10,271
Annual admission rate per thousand employees to hospitals and quarters	1,254.21	231.06	405.67

TABLE XIV.—NUMBER OF EMPLOYEES CONSTANTLY SICK IN HOSPITALS AND QUARTERS.

	White.	Black	Total.
Hospitals:			
Ancon Hospital	38.25	151.10	189.35
Colon Hospital	5.19	15.05	20.24
Total	43.44	166.15	209.59
Quarters:			
Ancon	5.59	.....	5.59
Balboa	10.02	2.00	12.02
Pedro Miguel	1.44	.38	1.82
Paraiso	.24	.36	.60
Gamboa	.....	.48	.48
Gatun	1.28	2.85	4.13
Colon	6.33	31.92	38.25
Total	24.90	37.99	62.89

TABLE XV.—AVERAGE NUMBER OF DAYS IN HOSPITAL OR QUARTERS FOR EACH ADMISSION OF SICK EMPLOYEE.

	White.	Black.	Total.
Hospitals:			
Ancon Hospital	12.69	19.45	17.59
Colon Hospital	10.55	11.04	10.24
Total (average)	11.95	18.13	16.40
Quarters:			
Ancon	2.25	.....	2.25
Balboa	2.48	3.45	2.55
Pedro Miguel	2.27	1.92	2.30
Paraiso	3.21	2.24	2.49
Gamboa	.....	2.28	2.28
Gatun	2.58	7.19	4.10
Colon	2.95	13.35	9.06
Total (average)	2.52	11.80	5.19

TABLE XVI.—NUMBER OF DAYS HOSPITAL TREATMENT FURNISHED VARIOUS CLASSES OF PATIENTS.

Class.	White	Foreign.	Black.	Total.
Ancon Hospital:				
Panama Canal employees	7,736	4,836	51,477	64,049
Army and Navy patients	46,648	.....	.....	46,648
Panama Government pay patients	.....	.....	81	81
Other pay patients	12,823	10,066	24,579	47,468
Charity patients	1,843	1,435	9,060	15,338
Total	72,050	16,337	85,197	173,584
Corozal Hospital (insane):				
Panama Canal employees	558	814	3,693	5,065
Army and Navy patients	2,599	.....	.....	2,599
Panama Government pay patients	1,113	18,825	76,833	96,771
Other pay patients	.....	1,434	1,761	3,195
Charity patients	112	3,657	25,177	28,946
Total	4,382	24,730	107,464	136,576
Corozal Farm (injured employees):				
Panama Canal employees	.....	3,167	16,576	19,743
Chronic ward: Charity patients	.....	.....	9,603	9,603
Colon Hospital:				
Panama Canal employees	1,405	490	5,478	7,373
Army and Navy patients	3,115	445	2	3,562
Panama Government pay patients	10	197	1,487	1,694
Other pay patients	3,361	2,402	5,290	11,053
Charity patients	732	130	326	1,188
Total	8,623	3,664	12,583	24,870
Palo Seco Leper Asylum (lepers):				
Panama Government pay patients	.....	390	12,302	12,692
Charity patients	.....	270	8,461	8,731
Total	.....	660	20,763	21,423

TABLE XVII.—WARD LABORATORY REPORTS.

	Ancon Hospital.	Colon Hospital.	Santo Tomas Hospital.
Blood examinations (total number)	9,229	1,636	1,437
Differential counts	332	162	25
Estivoautumnal	662	132	256
Quartan	15	.....	.....
Undetermined (for malaria)	2	.....	.....
Mixed	2	.....	.....
Crescents	10	.....	.....
Teritan malaria	129	34	44
Filaria	28	.....	.....
Hemoglobin estimations	4,006	44	.....
Red blood counts	85	25	8
White blood counts	1,674	256	119
Spirocheta obermeyeri	.....	2	.....
Stool examinations (total number)	9,384	484	8,282
Ameba	137	8	29
Ascaris lumbricoides	151	.....	864
Balantidiun coli	6	.....	2
Ciliated monads	153	22	22
Entameba (histolytica and tetragena)	45	.....	1
Guaiac tests	173	.....	.....
Pus and blood	625	57	17
Blood	.....	3	21
Mucus and pus	.....	.....	39
Strongyloides	271	5	205
Tænia saginata	15	.....	.....
Tricocephalus dispar	610	6	397
Uncinaria (ova)	1,095	21	1,953
Cercomonas, intestinal	3	.....	.....
Bilharzia	19	.....	.....
Oxyuris vermicularis	.....	1	1
Pus	.....	1	.....
Urine examinations (total number)	22,823	2,858	7,466
Albumen	5,629	466	1,471
Bile	211	.....	6
Casts	4,380	285	729
Ciliated monads	118	.....	.....
Epithelia	6,219	159	169
Guaiac tests	123	.....	.....
Hemin crystals	125	74	.....
Urates	.....	6	1
Oxalate of lime	.....	9	.....
Mucus and pus	.....	432	548
Indican	2,011	3	.....
Pus and blood	9,080	624	184
Sugar	4,357	16	61
Blood	30	182	74
Phosphates	.....	53	89
Red cells	18	39	.....
Acetone	.....	13	.....
Trichomonas vaginatio	4	.....	.....
Hyaline casts	.....	.....	145
Granular casts	.....	.....	93
Sediment	.....	38	.....

TABLE XVII.—WARD LABORATORY REPORTS.—Continued.

	Ancon Hospital.	Colon Hospital.	Santo Tomas Hospital.
Sputum examinations (total number)	5,178	297	1,173
Positive for tubercle bacilli	430	34	206
Positive for pneumococcus	.....	2	2
Positive for Frankle's cocci	.....	1	.....
Positive for streptococci	.....	1	.....
Smear examinations (total number)	882	46	1,479
Eye	7	.....	.....
Spinal fluid	336	.....	14
Urethral and vaginal	582	13	6
Positive for gonococci	.....	7	474
Positive for leprosy	.....	.....	10
Positive for ameba	.....	.....	1
Positive for diplo. meningitis	.....	.....	1
Chest	3	.....	.....
Positive for streptococci	.....	.....	5
Positive for diphtheria	.....	.....	32
Positive for Koch-Weeks B	.....	.....	3
Positive for spirochetæ pal	.....	.....	1
Nasal smears	20	.....	.....
Smear from foot	1	.....	.....
Throat cultures	.....	.....	86
Blood cultures	.....	.....	18
Widal reactions	.....	.....	32
Positive for B. diphtheria	.....	.....	6
Surgical tissues	.....	.....	59
Pathological tissues	.....	.....	344
Wasserman tests	.....	.....	2,108
Positive	.....	.....	245
Autopsies performed	.....	.....	118
Total	90,828	8,557	31,369

TABLE XVIII.—SURGICAL OPERATIONS PERFORMED.

	Ancon Hospital.		Colon Hospital.		Santo Tomas Hospital.
	Number.	Died.	Number.	Died.	Number.
Amputations:					
Arm			1	1	3
Hand			3		
Thigh	1		3	2	1
Leg	4		2		8
Foot	1				1
Digits, multiple	9		6		19
Forearm	1				1
Digits, single	4				
Amputations of thigh					1
Leg, double	1				
Operations on bones:					
Craniectomy, decompressive	2	1	10	5	
Resection of knee	1				
Resection of ankle					1
Ostiéctomy	9		6		1
Wiring of fractures, simple	11		2		1
Plating of fractures, simple	5		1		
Wiring of fractures, compound	1		1		1
Plating of fractures, compound	2				
Resection of elbow	1				
Laminectomy	3	1	2	1	
Excision of maxilla	1		1		
Excision of coccyx			1		
Bone transplantation	7		1		
Anthrotomy of knee	1				
Lane plate of femur			1		
Amtroplastry			1		
Adenectomy:					
Cervical	17		4		4
Axillary	6				
Inguinal, single	186		12		146
Inguinal, double	47		9		9
Femoral	25				
Ventral	6				3
Herniotomy:					
Inguinal, single	153	1	69		98
Inguinal, double	47		22		19
Ventral	17		7		12
Strangulated	4	1	3		6
Combined					1
Femoral	2				1
Genito-urinary tract:					
Nephrectomy	3				
Perinephritic abscess, drainage of	2				
Cystotomy	1		4	1	2
Urethrotomy, internal	21				21
Urethrotomy, external	26		1		47
Prostateomy	2		1		1
Hydrocele, single, radical cure	67		18		26
Hydrocele, double, radical cure	4		1		7
Orchidectomy	10		1	1	11
Epididymotomy	43				1
Amputation of scrotum	37				1
Amputation of penis					6

TABLE XVIII.—SURGICAL OPERATIONS PERFORMED—Continued.

	Ancon Hospital.		Colon Hospital.		Santo Tomas Hospital.
	Number.	Died.	Number.	Died.	Number.
Genito-urinary tract—Continued.					
Curettage uteri	196	1	16		124
Perineoplasty	24		19		1
Trachelorrhaphy	9		10		1
Vaginal sections					19
Circumcision	107				98
Nephrotomy	5				
Urothrotomy	2				
Hydrocele, double	7				
Varicocele, radical cure	38		21		
Ureterotomy					1
Vaginal punctures					22
Obstetrical:					
Cæsarian section, abdominal	4		1	1	1
Cæsarian section, vaginal	2				
Accouchement, forceps	6		1		
High forceps	1		4		
Low forceps	10		5		
Version	8		4		
Perineorrhaphy	26		1		
Breech extraction	2		5		
Sixth month precipitate			1		
Placenta previa			2	1	
Precipitate labor with adherent placenta, gas bacillus			1	1	
Thorax:					
Thoracotomy	6	1	2	1	
Excision of breast and axilla	2		1		1
Rectum:					
Hemorrhoids, radical cure	122		23		77
Fistula in-ano, excision of	28		8		3
Prolapsus, rectum, radical excision			2		
General:					
Thyroidectomy	11				3
Varicose veins, excision of	16		4		1
Tenorrhaphy	7				1
Excision of surface neoplasms	29		4		
Plastic operations for severe injuries	5		17	2	
Plastic operations for effects of disease	5		23	3	
Skin graft	1		4		30
Tracheotomy			1	1	
Nephrectomy					1
Nephropexy					1
Nerve stretching	5				
Minor operations, various	904		45		152
Enterectomy	1		1	1	
Enterorrhaphy	1				
Plastic operation for chronic peritonitis	3	1	1	1	
Gunshot wound of abdomen	5		2	1	
Stab wound of abdomen	1	1	3		
Release, intestinal adhesions	2				
Amputation, cervix	1				
Rupture of spleen					1
Rupture of the bowel and general peritonitis			1	1	
Hematoperitoneum			1	1	
Extensive injuries to soft parts, operation for	4				

TABLE XVIII.—SURGICAL OPERATIONS PERFORMED—Continued.

	Ancon Hospital.		Colon Hospital.		Santo Tomas Hospital.
	Number.	Died.	Number	Died.	Number.
General—Continued:					
Tuberculous peritonitis			1		
Plastic operation for intestinal obstruction			1		1
Excision of lower lip			1		
Plastic operation for congenital defects	1		1		
Plastic tattoo	1				
Laparotomy:					
For tuberculous peritonitis	6	1	2		3
For intestinal obstruction	3	1	1	1	
Exploratory	6		1		5
Gastro-enterostomy	11		1	1	11
Appendectomy	92		75		99
Appendectomy with local peritonitis	11		5		
Gastrotomy					1
Cholocystostomy	4				3
Cholecystotomy	3		1		1
Abscess of liver, laparo-hepatotomy for	3	2	1		5
Abscess of liver thoraco-hepatotomy for	3	1			
Pan-hysterectomy	13	1	25		68
Supravaginal hysterectomy	19	1	2		4
Hysteromyomectomy	13		2		
Salpingectomy, single	3		1		18
Salpingectomy, double	1		34		29
Salpingo-oophorectomy	16		35		57
Ovarian cystectomy	10		11		1
Oophorectomy	1		20		22
Suspensio-uteri	31		53		69
For ectopic gestation	5		1		
For esophageal stricture	1	1			
Mayo bunion, bilateral	2				
Major operations, various other	20				18
Minor operations, various other	1354		54		560
Appendectomy with general peritonitis	4	2	13	1	
Salpingostomy					3
Splenectomy					5
Gunshot wound of abdomen			1	1	
Stab wound of abdomen			2		
Arsphenamine, intravenous	1798				
Reduction of humerus	1				
Reduction of forearm	3				
Reduction of Pott's fracture	1				
Dislocation, elbow	1				
Dislocation, shoulder	1				
Nailing of fractured femur	1				
Open reduction of metacarpal	1				
Circumcision	181				92
For general peritonitis	1		1		
Gastrectomy	1				
Entero-enterostomy	1				
Cauterization of chancroids	47				
Excision of bunions	4				
Excision of tattoo marks	12				
Orthroplasty	1				
Total	6083	18	774	30	2663

TABLE XIX.—REPORT OF OPERATIONS, EYE AND EAR DEPARTMENTS.

ANCON HOSPITAL.

Operations performed:	
Expression of eye	2
Uvilectomy	1
Incision and drainage, peritonsillar abscess	16
Incision and drainage, furnicle ear	4
Adenoidectomy	255
Cataract removal	6
Evisceration	4
Chalazion excisions	38
Iridectomy	5
Mastoidectomy	14
Needling of eye	20
Paracentesis	58
Pterygium transplantations	41
Removal of nasal polyps	17
Scleral trephine	1
Spur, removal of	5
Submucous resection	61
Tonsillectomy	426
Turbinectomy	44
Ectropion, upper lid	1
Paracentesis of ear	6
Scarification of eyelid	2
Cautery of turbinates	3
Ethmoid curettement	3
Minor operations	53
Removal of foreign body, eye	1
Removal of foreign body, nose	2
Lacrymal sac, removal of	1
Lacrymal duct, Bowman's dilation of	1
Myiasis of evelid, removal of	1
Maxillary sinus, perforation and drainage of	1
Reduction of compound fracture, nose	2
Removal of polyps from ear	1
Plastic eyelid	3
Enucleation	1
Removal of foreign body from ear	3
Removal, radical, frontal sinus	1
Incision abscess, epiglottis	1
Rhinoplasty	3
Incision and drainage hordeolum	1
Total	1,030
Refractions	1,312

SANTO TOMAS HOSPITAL.

Ear:	
Furunculosis of canal	27
Otitis media, acute	189
Otitis media, chronic	519
Foreign bodies	24
Polyps of canal	7
Suppurative otitis	43
Mastoid operations	5
Perforation of drum	17
Eye:	
Foreign bodies	14
Conjunctivitis	400
Phlyctenular conjunctivitis	80
Chronic glaucoma	1
Corneal ulcer	117
Keratitis	236
Iritis	106

Eye—Continued:	
Hordeolum	17
Chalazion	21
Cataract	579
Blepharitis	29
Papillitis	2
Enucleations	6
Eye examinations	79
Gonorrheal opthalmia	9
Retinitis	56
Glaucoma	8
Nose and throat:	
Ethmoiditis	9
Suturing of soft palate	1
Tonsillitis	320
Pharyngitis	131
Peritonsillar abscess	53
Alveolar abscess	1
Rhinitis	103
Hypertrophy of turbinates	77
Laryngitis	51
Foreign bodies	8
Operations:	
Screw worm infection	6
Tumor of nose	9
Cataract	32
Pterygium	103
Lachrymal fistula	1
Iridectomy	39
Mastoid	3
Tonsillectomy	133
Adenoidectomy	37
Turbinectomy	9
Submucous resection	11
Removal of nasal polyps	3
Pterygium transplantations	6
Dislocation of lens	19
Occlusion of lachrimal	3
Minor	25

TABLE XX.—REPORT OF X-RAY DEPARTMENT, ANCON HOSPITAL.

Nature of examinations:	
Arm and forearm	89
Chest	322
Dental	236
Elbow	41
Foreign bodies	25
Foot and ankle	124
Gall bladder	27
Gastro-intestinal	47
Hand	83
Head	46
Hip	26
Jaw	57
Kidneys	78
Knee	43
Legs	41
Liver	4
Ribs	10
Shoulder	42
Sinews	70
Spine	52
Spleen	3
Stomach	132
Thigh	33
Wrist	52
Treatments	67
Others of abdomen	151

Nature of examinations—Continued.	
Pelvis	14
Upper extremities	322
Lower extremities	274
Total	2,511

CLASSIFICATION OF PLATES AND FILMS

Dental films	687
6½ by 8½	1,118
8 by 10	2,146
10 by 12	1,477
14 by 17	984
Total	6,412

TABLE XXI.—SANTO TOMAS HOSPITAL.

PATIENTS TREATED.

Class.	Remaining Jan. 1, 1918.	Admitted.	Died.	Discharged.	Remaining Dec. 31, 1918.
Pay cases	30	1,055	30	1,026	29
Charity cases	390	8,886	804	7,999	473
Total	420	9,941	834	9,025	502

Class.	Number treated.	American.		Other nations.	
		White.	Black.	White.	Black.
Pay cases	1,306	33	.....	446	827
Charity cases	13,005	52	.....	1,240	11,713
Total	14,311	85	.....	1,686	12,540

Number of days relief furnished patients	171,952
Average number of patients constantly sick	470
Average number of days treatment for each patient admitted	11
Cost of subsistence per patient, per day	$0.43

DISPENSARY REPORT.

Class.	White.	Black.	Total.
Natives treated	168	14,708	14,876
Foreigners treated	450	5,049	5,499
Total	618	19,757	20,375

DISEASES TREATED.

General diseases:	
Malaria	479
Measles	153
Scarlet fever	1
Diphtheria and croup	22
Influenza	325
Dysentery	35
Leprosy	12
Erysipelas	23
Other epidemic diseases	37
Purulent infection and septicemia	77
Pellagra	6
Beriberi	15
Tuberculosis of the lungs	132
Tuberculous meningitis	2
Abdominal tuberculosis	1
Pott's disease	3
Tuberculosis of other organs	17
Syphilis	329
Soft chancre	82
Gonococcus infection	703
Cancer and other malignant tumors of the stomach and liver	6
Cancer and other malignant tumors of the female genital organs	18
Cancer and other malignant tumors of the skin	7

DISEASES TREATED.—Continued.

Cancer and other malignant tumors of other organs	3
Other tumors	7
Acute articular rheumatism	35
Diabetes	3
Exophthalmic goiter	1
Anemia, chlorosis	50
Alcoholism—acute or chronic	109
Other chronic poisonings	5
Typhoid fever	1
Whooping cough	1
White swellings	1
Syphilis, period not stated	91
Cancer and other malignant tumors of the peritoneum, intestines, rectum	2
Cancer and other malignant tumors of other organs and of organs not specified	11
Other tumors (tumors of the female genital organs excepted)	17
Chronic rheumatism and gout	13
Leukemia	2
Smallpox	15
Tetanus	1
Acute miliary tuberculosis	1
Rickets	1
Other general diseases	5
Other chronic occupational poisonings	1
Cancer and other malignant tumors of the buccal cavity	1
Scurvy	1
Nervous diseases:	
Simple meningitis	2
Locomotor ataxia	4
Paralysis without specified cause	9
Other forms of mental alienation	54
Epilepsy	25
Convulsions	1
Convulsions of infants	2
Neuralgia and neuritis	35
Other diseases	17
Other diseases of the eyes and their annexa	173
Diseases of the ears	26
Other diseases of the spinal cord	4
Cerebral hemorrhage, apoplexy	8
Hysteria	4
Circulatory:	
Organic diseases of the heart	78
Diseases of the arteries, atheroma and aneurysm	71
Diseases of the veins (varices, hemorrhoids, phlebitus)	56
Diseases of the lymphatic system	184
Hemorrhage diseases of the circulatory system	3
Acute endocarditis	2
Other diseases of the circulatory system	3
Respiratory:	
Chronic bronchitis	101
Broncho-pneumonia	33
Pneumonia	37
Pleurisy	43
Asthma	16
Diseases of the nasal fossæ	10
Other diseases of the respiratory system	2
Digestive:	
Diseases of the teeth and gums	11
Other diseases of the mouth and annexa	3
Diseases of the pharnyx	181
Diseases of esophagus	1
Ulcer of the stomach	4
Other diseases of the stomach	7
Diarrhea and enteritis	72
Diarrhea and enteritis --2 years and over	151
Ankylostomiasis	462

DISEASES TREATED—Continued.

Digestive—Continued.	
Intestinal parasites	55
Appendicitis and typhlitis	124
Hernias, intestinal obstructions	125
Diseases of the anus and fecal fistula	20
Other diseases of the intestines	46
Cirrhosis of the liver	13
Billary calculi	7
Other diseases of the liver	28
Simple peritonitis	2
Intestinal obstruction	9
Diseases of spleen	4
Genito-urinary:	
Bright's disease	140
Other diseases of the kidneys and annexa	7
Diseases of the bladder	14
Diseases of the urethra, urinary abscess, etc	65
Nonvenereal diseases of the male genital organs	78
Uterine hemorrhage (nonpuerperal)	7
Uterine tumor (noncancerous)	27
Metritis	97
Other diseases of the uterus	126
Salpingitis and other diseases of the female genital organs	118
Calculi of the urinary passages	2
Cysts and other tumors of the ovary	5
Nonpuerperal diseases of the breast (cancer excepted)	9
Acute nephritis	5
Puerperal state:	
Normal labor	874
Accidents of pregnancy	203
Other accidents of labor	1
Puerperal septicemia	3
Puerperal albuminuria and convulsions	1
Puerperal diseases of the breast	1
Puerperal hemorrhage	5
Skin, etc:	
Gangrene	5
Furuncle	11
Acute abscess	128
Scabies	26
Other diseases of the skin and annexa	307
Trichophytosis	1
Bones:	
Diseases of the bones (tuberculosis excepted)	29
Diseases of the joints (tuberculosis and rheumatism)	58
Amputations	17
Other diseases of the organs of locomotion	9
Malformation:	
Congenital malformations (stillbirths not included)	45
Early infancy:	
Newborn child	827
Lack of care	1
Old age:	
Senility	12
Affections produced by external causes:	
Other acute poisonings	12
Burns (conflagrations excepted)	21
Traumatism by firearms	19
Traumatism by cutting or piercing instruments	77
Starvation	1
Excessive cold	4
Fractures (causes not specified)	73
Other external violence	138
Poisoning by food	1
Dislocations	2
Sprains	1
Venomous bites and stings	3

DISEASES TREATED.—Continued.

Ill-defined:	
Diseases not specified or ill-defined	29
No disease	125
Ill-defined organic diseases	5

TABLE XXII.— COROZAL HOSPITAL—STATEMENT OF COMMITMENTS, AND DISCHARGES.

COMMITMENTS.

	Male.	Female.
From Canal Zone:		
First admission	81	24
Second admission	4	1
Sixth admission	1	
Seventh admission	1	
From Panama Government:		
First admission	58	44
Second admission	4	2
Third admission	2	1
Totals	151	72

DISCHARGES.

	Well.		Improved.		Unimproved.	
	Male.	Female.	Male.	Female.	Male.	Female.
Antigua				1		
Barbados	1	4	1	2	1	
Colombia	1		4		2	
China			1			
England			2			
France			1			
Germany	1					
Italy			1			
India	1					
Jamaica	1	4	1	3		
Japan	1		1			
Martinique		1	1	2	1	
Mexico			1			
Panama	4	1	6	2	5	1
Porto Rico			8		3	
Peru					1	
St. Vincent			1			
St. Lucia				1		
Trinidad			1			
United States	2		18	1	7	
Totals	12	10	48	12	20	1

DEATHS.

Medical diagnosis.	Mental diagnosis.	Male.	Female.
Tuberculosis of lungs	Epilepsy	1	1
Epilepsy	Epilepsy	1	1
Organic brain disease	Organic brain disease	3	
Tuberculosis of lungs	General paralysis of insane	1	
Diarrhea and enteritis	Dementia precox	1	
Disseminated tuberculosis	Dementia precox		1
Undetermined	Dementia precox	2	
Sinusitis	Dementia precox	1	
Endocarditis	General paralysis of insane	1	
Tuberculosis of lungs	Toxic psychosis; pellagra		1
Endocarditis	Organic brain disease	1	
Lobar pneumonia	Dementia precox	1	
Organic disease of the heart	Dementia precox	1	
Arteriosclerosis	Paranoid state; psychosis associated with cerebral arteriosclerosis	1	
Arteriosclerosis, tertiary syphilis	Organic brain disease	1	
Cirrhosis of liver, chronic nephritis	Dementia precox	1	
Pellagra	Toxic psychosis		1
Cerebral hemorrhage; apoplexy	Psychosis associated with epilepsy	1	
Cerebral hemorrhage; apoplexy	Psychosis associated with syphilis	1	
General paralysis of insane	General paralysis of insane	2	
Arteriosclerosis	Psychosis associated with arteriosclerosis	1	
Pulmonary tuberculosis of lungs	Acute exhaustive psychosis		1
Tuberculosis of lungs	Psychosis associated with arteriosclerosis	1	
Purulent infection and septicemia	Dementia precox	1	
Chronic nephritis	Toxic psychosis	1	
Tuberculosis of lungs	Dementia precox	2	
Pyelonephritis	Toxic psychosis		2
Arteriosclerosis	Psychosis associated with arteriosclerosis	1	1
Tuberculosis of lungs	Phychosis associated with arteriosclerosis		1
Septicemia	Dementia precox	1	
Arteriosclerosis	Manic depressive psychosis		1
Cerebral syphilis	Tertiary syphilis	1	
Gangrene of the lungs	Psychosis associated with epilepsy		1
Bright's disease	Dementia precox	1	
Chronic endocarditis	Dementia precox	1	
Uncinariasis	Dementia precox	1	
Miliary tuberculosis	Senile dementia		1
Lobar pneumonia	Epilepsy		1
Tuberculosis of lungs	Imbecility	1	
Tuberculosis of lungs	Cerebral syphilis	2	
Broncho pneumonia	Dementia precox	1	
Nephritis miliary tuberculosis	Imbecility	1	
Ischicretal abscess	Dementia precox	1	
Tuberculosis peritonitis	Psychosis associated with epilepsy	1	
Syphilis artiosclerosis	Toxic psychosis pellagra		1
Pellagra	Toxic psychosis pellagra		1
Paresis	Tertiary syphilis		1
Diffuse nephritis	Dementia precox		1
Cerebral syphilis	Cerebral syphilis	1	
Chronic intestitial nephritis	Psychosis associated with arteriosclerosis	1	
Epilepsy	Imbecility with epilepsy		1
Total		42	20

TABLE XXIII.—REPORT OF BOARD OF HEALTH LABORATORY.

Bacteriological examinations:	
Blood cultures, 5; pneumococcus, 1; streptococcus, 4; B. typhosus and pneumococcus, 9; staphylococcus aureus, 2; B. coli, 1; M. tetrag, 3; B. pyocyancus, 1	191
Agglutination reactions (1 positive for B. typhosus) blood	5
Throat cultures (8 new positive B. diphtheria; 25 repeated positive; 42 positive for B. diphtheria) 7 new cases	539
Sputums, 33; (positive for B. tuberculosis)	164
Stools, 22 positive for B. dysenteria; 1 B. dysenteria "Flexner Strong" type; 4 typhosus; 2 B. fecates alkaligenes	335
Stools examined for ameba; 1 A. histolytica; 1 A. coli; a entameba histolytica	8
Stools, examination for intestinal parasites; 4 strongyloides; 8 hookworm; 9 trichiophalus disease; 2 ascaria	47
Urines; 48 B. coli; 5 staphylococcus; 1 B. typhosus	193
Examination of urethral pus	1
Pleural fluids (1 positive streptococcus) 1 B. pyocyaneous	5
Spinal fluids; 1 pneumococcus; 1 staphylococcus aureus	6
Synovial fluid	1
Cultures of knee fluid	7
Bile	1
Pus from right lung	1
Dark field examination of spirochete pallida	3
Leper suspects; 3 B. lepre	16
Cultures from autopsy; 1 pneumococcus	12
Vaginal smears	9
Brains of dogs for rabies	4
Milk from Corozal dairy; 4 specimens plated	112
Milk from Panama dairies (Health Office, Panama)	46
Milk from Commissary Division	125
Milk from Ancon Hospital kitchen	5
Blood smears for malarial parasites; 4 estivoautumnal malaria; 5 tertic; 1 quartan	68
Nasopharyngeal cultures (hospital)	21
Eye smears (2 year negative intracellular diplococci;) 2 gonnococcus	10
Tongue smears	1
Cultures of pleural fluid; 2 staphylococcus aureus; 1 pneumoccus	19
Cultures of spinal fluids; 2 staphylococcus aureus; 1 meningococcus	56
Milk from Ancon Commissary	6
Milk from Health Office, Colon	4
Milk from Cristobal Commissary	2
Pus for vaccine	2
Naso-pharyngeal cultures from meningitis carriers; 24 meningococcus	79
Cultures from middle ear; 1 pneumococcus	1
Cultures from eye; 1 streptococcus	5
Autogenous vaccine prepared	1
Anti-typhoid vaccinations	8
Smallpox	32
Cultures of chest fluid	1
Blood smears examined for filaria	1
Blood smears examined for relapsing fever	1
Sputum—cultures from pneumonia patients; 1 M. tetrag	5
Culture from ulcer	2
Blood examined for pernicious anemia	1
Smallpox vaccinations	7
Pathological examinations:	
Tissues prepared and examined; 14 frozen	837
Autopsies, human	220
Autopsies, animal	45
Blood of chickens examined for parasites	31
Examination for yaws	1
Examination for Oriental sore	1
Rats examined; (mus. musculus, 12,386; mus. norvegicus, 2,088; mus. rattus, 2,257; mus. alexandrinus, 682)	17,413
Examination of hog viscera	1
Smears from pasture clearing employees for filariases (13 positive)	354
Smears from patients at Ancon Hospital, examined for filariases (9 positive)	102
Smears from patients at Santo Tomas, examined for filariases (5 positive)	368
Autopsies, fowls; 6 chickens; 6 turkeys	12
Examinations for filariases	425

General:	
Wassermann reactions	12,615
Antityphoid vaccinations	36
Smallpox vaccinations	15
Autogenous vaccines prepared	2
Blood smears examined for malaria (33 positive)	167
Blood smears examined for filaria (1 positive)	67
Animals examined for murrina (2 positive)	27
Spleens of cattle examined for anthrax (29 positive)	80
Blood films examined for malaria (7 positive)	29
Blood films examined for trypanosomes and piroplasms	41
Tissue and hide examined for anthrax (2 positive)	2
Water from cispate examined for anthrax	1
Blood films of cows (2 positive B. bigeminum)	4
Examination for yaws	1
Smears from prostitutes (451 Colon; 1,779 Panama)	2,976
Chemical examinations:	
Urines	149
Gastric contents	9
Oil	15
Flour	6
Alcohol	6
Cattle dip from Corozal farm	4
Chlorinated lime from Colon Hospital	1
Lime water from Balboa dispensary	1
Benzine from medical store	2
Paint remover from district quartermaster, Balboa Heights	1
Beverages from Health Office, Panama	8
Coins from paymaster, The Panama Canal	2
Soap	3
Ashes and flue dust from Balboa incinerator	2
Honey from Commissary Division	1
Sugar cane for J. A. Senter	1
Capsules for J. A. Finzie	1
Spinal fluids:	
Phenol test	265
Ammonium sulphate test	246
Butyric acid test	261
Collodial gold test	218
Toxological examination, autopsy No. 5212	1
Vinegar for Health Office, Panama	1
Lard, Commissary Division	1
Noti seed, Commissary Division	1
Brewer's grain, district quartermaster, Balboa Heights	1
Carbolic acid, sanitary inspector, Ancon	2
Metallic packing for Mechanical Division	1
Identification of powder for Lieutenant Jenkins, 33d Infantry	1
Butter for oleomargarine test, Commissary Division	2
Commercial potash	1
Liquor	1
Calculus, urinary	1
Iron, pig	1
Iron, cast	1
Ice cream	2
Gasoline	6
Bay rum	2
Pipe, lead	1
Milk, analysis	188
Drugs, analysis	8
Undertaking Department:	
Cremations	202
Embalmed	74
Buried at Corozal	156
Bodies shipped to the United States	43
Bodies sent to Panama	24
Bodies sent to Colon	8
Bodies sent to Gatun	6
Bodies sent to Monte Lirio	1
Bodies sent to Colombia	1
Bodies sent to Corinto	1

Entomological examinations:	
Identification of mosquito larvæ (anopheles, 354; non-anopheles, 226)	614
Identification of mosquito adults (anopheles, 4,116; non-anopheles, 5,495)	11,643
Other arthropods determined (18 species)	90
Miscellaneous identifications	6
Mosquitoes examined for microfilaria	270

TABLE XXIV.—CONTAGIOUS AND INFECTIOUS DISEASES.

Reported during the year 1918.

	Panama.	Colon.	Canal Zone.	Non-resident.	Total.
Beriberi	2	.....	.....	.....	2
Cancer	18	3	2	.....	23
Chickenpox	65	10	26	.....	101
Chancroids	.....	.....	1	.....	1
Diphtheria	31	10	7	.....	48
Dysentery	33	10	51	13	107
Gonococcus infection	82	135	435	37	689
Hookworm disease	1	.....	12	.....	13
Influenza	507	86	1,695	.....	2,288
Leprosy	10	.....	7	.....	17
Malaria	50	71	1,085	199	1,405
Measles	165	60	284	3	512
Measles, German	4	2	3	.....	9
Mumps	5	3	76	3	87
Meningitis, simple	2	.....	1	.....	3
Meningitis, epidemic, cerebrospinal	10	2	7	.....	19
Meningitis, tuberculous	4	.....	.....	.....	4
Meningitis, pneumococcus	.....	.....	2	.....	2
Ophthalmia neonatorum	.....	1	3	.....	4
Pellagra	6	.....	1	.....	7
Pneumonia	91	58	82	14	245
Poliomyelitis	1	.....	2	.....	3
Relapsing fever	.....	1	.....	.....	1
Smallpox	102	2	.....	29	133
Syphilis	86	4	209	5	304
Scarlet fever	1	.....	.....	.....	1
Typhoid fever	8	3	9	.....	20
Tetanus	1	.....	.....	.....	1
Tuberculosis	402	56	62	3	523
Whooping cough	17	13	72	.....	102
Yaws	1	.....	.....	.....	1

TABLE XXV.—REPORT OF ROUTINE SANITARY WORK PERFORMED IN THE CANAL ZONE AND THE CITIES OF PANAMA AND COLON.

	Canal Zone.	Panama.	Colon.[1]
Linear yards of new ditches constructed	15,709	1,956	33,075
Linear yards of ditches maintained (average)	244,218	1,551,372	269,799
Acres of vegetation removed	2,163	487	2,381
Number of garbage cans emptied	96,056	.....	729,905
Cubic yards of garbage removed	.....	146,920	172,006
Square yards of streets cleaned	798	7,200,000	45,095,991
Square yards of alleys cleaned	.....	.....	5,926,825
Pit closets inspected	3,155	.....	1,546
Closets disinfected	3,316	.....	.....
Number of water containers treated	47,015	76,582	1,527,849
Number of mosquito-breeding places destroyed	3,780	2,680	1,160
Mosquitoes destroyed in dwellings:			
Anopheles	37,711	.....	10,360
Stegomyia	440	.....	.....
Culex	83,648	.....	14,819
Number of fly-breeding places destroyed	53	3,219	221
Number of rats destroyed	18,948	14,995	5,039
Private properties cleaned	.....	361	35,170
Number of notices served to abate nuisances	391	4,462	7,160
Convictions for violation of sanitary code	.....	616	26
Houses disinfected or fumigated	346	310	11
Square yards of pools oiled, average, monthly	482,523	606,777	1,376,460
Buildings inspected	29,818	89,803	136,353
Buildings, construction and repairs:			
Plans for new buildings approved	1	39	29
Permits issued to repair old buildings	.....	1,168	678
Buildings demolished	.....	10	.....
Buildings condemned	.....	107	6
Food inspection:			
Dairies, milk vendors, etc	6	570	35
Bakeries, ice cream parlors, etc	.....	415	1,156
Bottling works, saloons, etc	.....	117	1,623
Hotels, clubs, restaurants, etc	166	1,037	2,654
Markets, fruit stands, miscellaneous	746	443	6,978
Material used during year:			
Crude oil ..... gallons	47,713	14,298	272,784
Larvacide ..... gallons	6,750	3,583	1,962
Kerosene ..... gallons	3,958	1,400	.....

[1] Includes Cristobal and Mount Hope, Canal Zone.

TABLE XXVI.—CONSOLIDATED REPORT OF QUARANTINE TRANSACTIONS AT THE PORTS OF BALBOA-PANAMA AND COLON-CRISTOBAL.

Vessels inspected and passed	2,788
Vessels held in quarantine	90
Vessels inspected and transiting Canal in quarantine	102
Vessels passed on medical officer's certificate	25
Total vessels entered	3,005
Supplemental inspections of detained vessels	109
Supplemental inspections of vessels at docks	899
Vessels fumigated on arrival	165
Vessels fumigated prior to departure	16
Bills of health issued	2,177
Bills of health viséed	1,920
Crew inspected on arrival	139,933
Passengers inspected on arrival	33,923
Total persons inspected on arrival	173,856
Crew passed on medical officer's certificate	36,747
Supplemental inspection of passengers and crew	17,500
Persons vaccinated in port on arrival	2,437
Persons vaccinated in port of departure or en route	9,100
Total number of persons vaccinated	11,537
Persons detained at quarantine stations to complete period of incubation of yellow fever and bubonic plague	3,613
Persons held in quarantine on board vessels	15,496
Total persons detained in quarantine	19,109
Passengers in transit passing through the Canal	20,190
Passengers in transit for Pacific ports not passing through Canal on arriving vessels	2,172
Passengers in transit for Atlantic ports	2,782
Immigrants rejected and deported	461

BOCAS DEL TORO.

Number of vessels inspected and passed	329
Number of crew inspected and passed	8,913
Number of passengers inspected and passed	2,349
Number of passengers, transit, inspected and passed	3,239

TABLE XXVII.—IMMIGRATION REPORT FOR THE PORTS OF BALBOA-PANAMA, AND COLON-CRISTOBAL.

	Cabin.	Steerage.
United States	5,636	3,508
Europe	77	14
Cuba	199	115
Porto Rico	234	1,897
West Indies (not shown above)	281	994
Costa Rica	125	71
Bocas del Toro, Republic of Panama	343	2,754
Salvador	5	1
Guatemala	11	2
Nicaragua	38	8
Honduras	4	.....
Mexico	1	1
Colombia	602	736
Venezuela	102	14
Peru	34	16
Ecuador	31	14
Chile	22	3
China and Japan	20	79
Total	7,765	10,227
Grand total	.....	17,992

TABLE XXVIII.—PERSONNEL REPORT.

(Average number of employees at work during the year.)

	1918.	1917.	December 31, 1918.		
			Gold.	Silver.	Total.
Chief health office	4	3	5	.....	5
Medical storehouse	9	8	4	5	9
Quarantine service	48	48	11	36	47
Health office, Panama	158	147	15	144	159
Health office, Colon	155	160	14	142	156
Ancon Hospital	338	330	122	220	342
Colon Hospital	50	44	17	32	49
Santo Tomas Hospital	6	6	6	.....	6
Palo Seco Leper Asylum	34	27	2	32	34
Zone sanitation	168	134	5	163	168
Corozal Hospital and farm	114	123	15	105	120
Dispensaries:					
Balboa	9	9	5	4	9
Gamboa*	2	1	.....	.....	.....
Gatun	4	4	2	2	4
Paraiso*	5	4	.....	.....	.....
Pedro Miguel	5	4	3	2	5
Total	1,109	1,052	226	887	1,113

*Gamboa and Paraiso dispensaries discontinued during the year, 1918.